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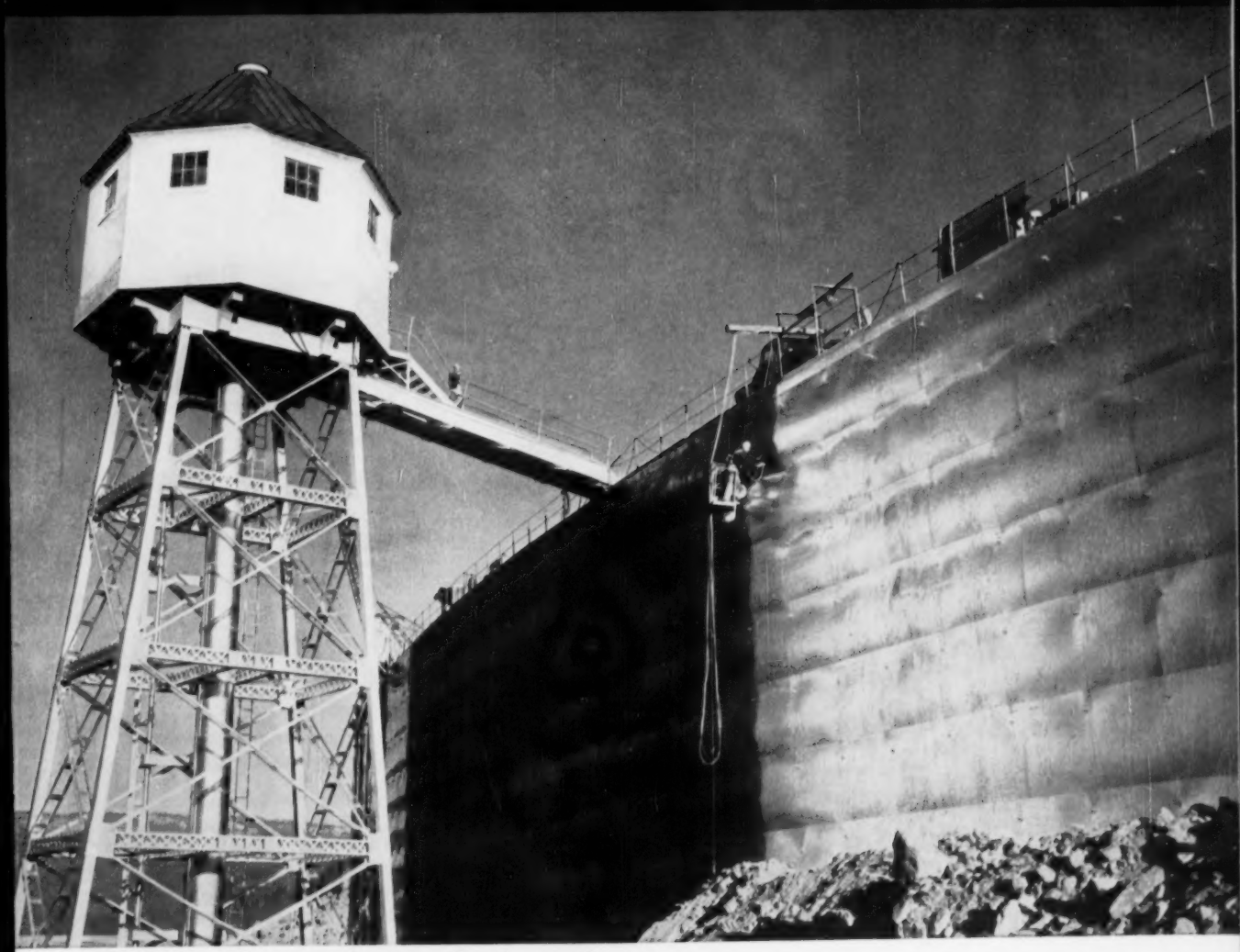

Quilt to keep dam safe from frost *p. 33*

A McGRAW-HILL PUBLICATION

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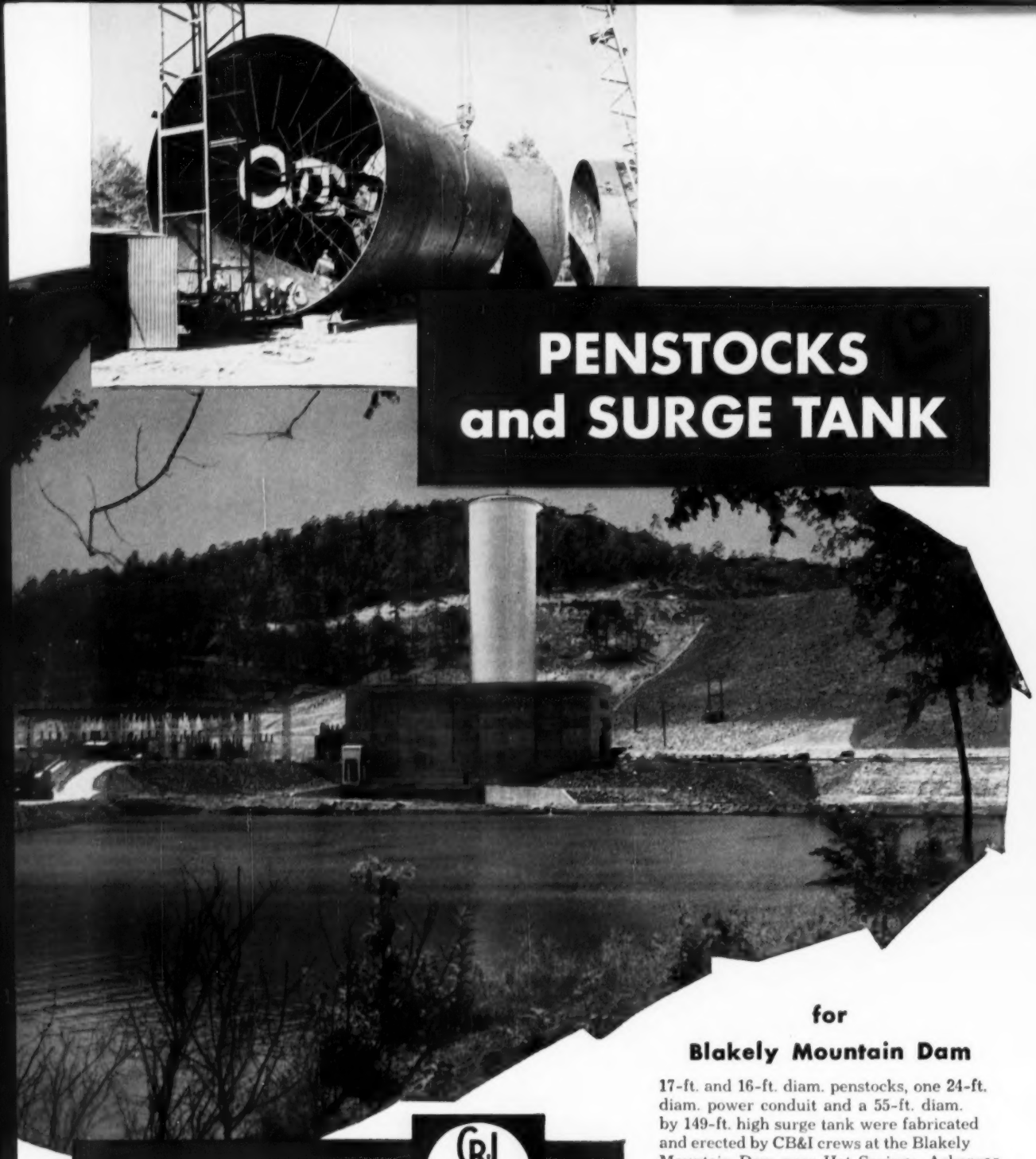

PENSTOCKS and SURGE TANK

for Blakely Mountain Dam

17-ft. and 16-ft. diam. penstocks, one 24-ft. diam. power conduit and a 55-ft. diam. by 149-ft. high surge tank were fabricated and erected by CB&I crews at the Blakely Mountain Dam near Hot Springs, Arkansas. The dam, built for the Corps of Engineers, U.S. Army, is a project of the Vicksburg District Corps of Engineers.

The equipment supplied the Blakely Mountain Dam is typical of pipe lines, penstocks and steel plate structures CB&I has built for hydroelectric generating plants and for water diversion projects all over the world. Our plants are completely equipped to design, fabricate and erect steel plate structures to meet *your* specifications.

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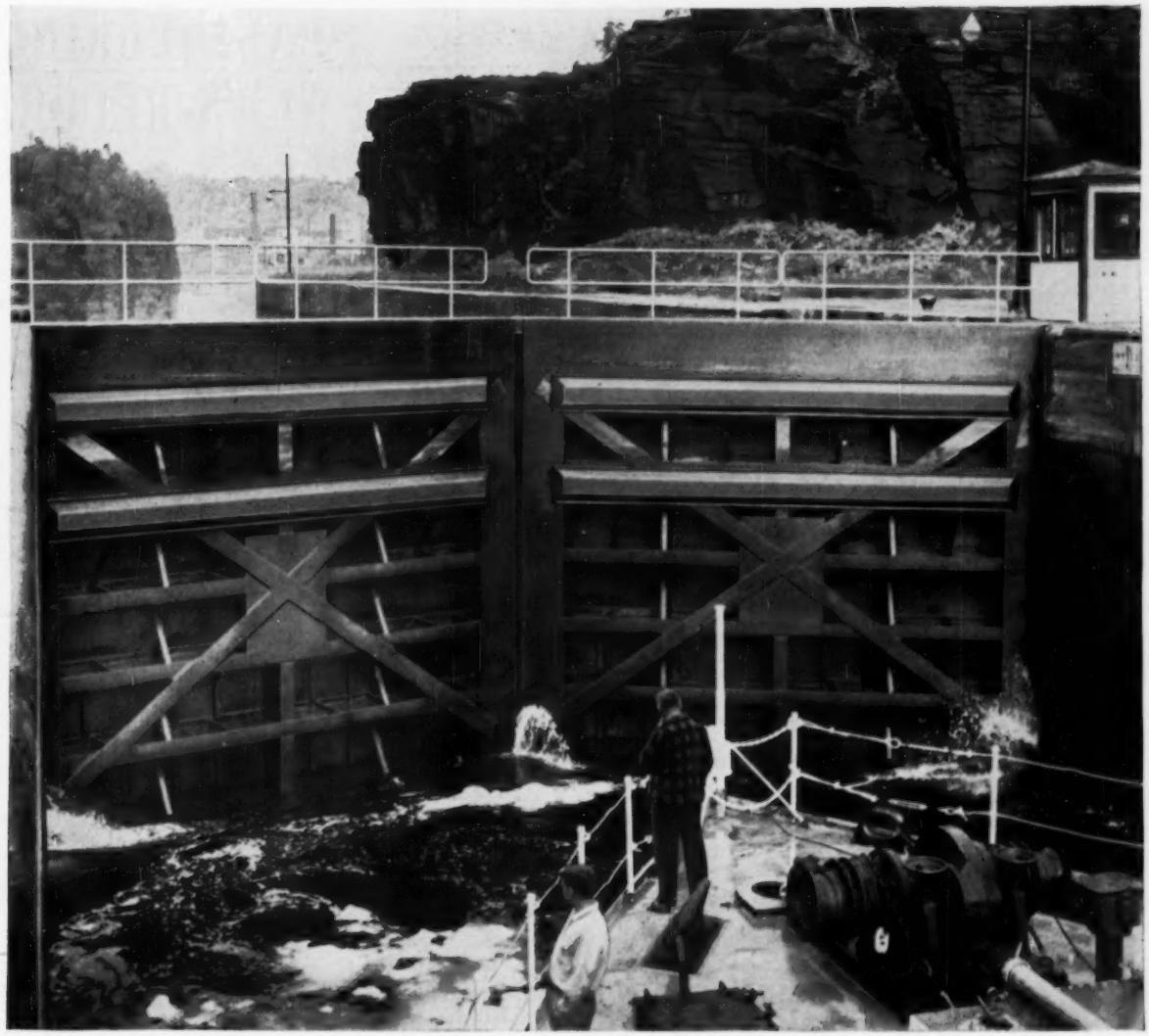

These lock gates total 38½ tons and each measures 21 ft 4 in. high by 24 ft 6 in. wide. Built by Alco Products, Inc., Schenectady, N. Y., for New York State, Department of Public Works. *Contractor:* A. S. Wikstrom, Inc., Skaneateles, N. Y.

New lock gates for New York State Barge Canal

While a vessel waits, the two huge new lock gates begin to swing open at Lock 17 on the New York State Barge Canal, at Little Falls, N. Y. Replacement of the old gates by these new ones, built by Alco Products, Inc., Schenectady, is part of the canal's extensive renovation program.

The new gates were fabricated of Mayari R high-strength, low-alloy steel. Mayari R was selected because of its superior corrosion resistance. Under marine atmospheric conditions, Mayari R has demonstrated twice the resistance to corrosion of copper steel and from five to six times that of carbon steel. Tests have also proved its superior lasting qualities under exposure to industrial atmospheres.

Weldability was another important factor in the fabrication of these gates, as each gate contained more than a mile of arc welding. Mayari R can be readily welded by all the usual methods, using shop procedures similar to those used with plain-carbon structural steels.

Mayari R has many other advantages, all of which are described and illustrated in detail in Catalog 353. Every design, production and purchasing man should have this informative book. To receive a copy, all you have to do is drop a line to the nearest Bethlehem sales office.

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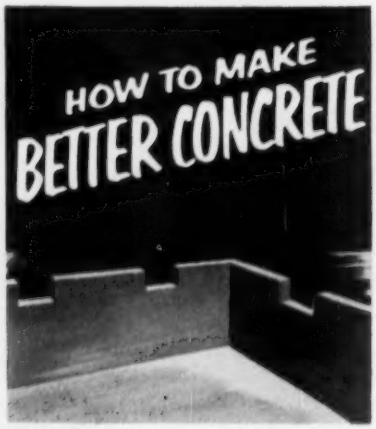

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Robrt F. Boger
Publisher

February 2, 1956 ENGINEERING
Vol. 156, No. 5 NEWS-RECORD

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International diesel power units provide dependable, low-cost power for shovels, crushers, etc. Here, McMillan Constr. Co., Denver, uses 115 hp IH diesel to power 1¼-yard dragline . . . 190 hp IH diesel on 200-ton-per-hour crusher.

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New replaceable plastic impregnated full-flow filters increase engine life by removing all harmful particles from the oil before it goes under full pressure to engine bearings. Exceptionally large filter area extends filter change period to 500 hours under normal conditions.

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Trouble-free single orifice injection nozzles, and precombustion chambers mounted at 45° angle thoroughly mix fuel and air under all load and speed conditions. You get follow-through power strokes, clear exhaust, smooth idling on low-cost No. 2 fuel.

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Six sizes of diesels, 52 to 190 hp, complete with radiator and fan. Also 12 models, 16½ to 200 hp, for gasoline, natural gas or LPG. See your nearest International Distributor for details.

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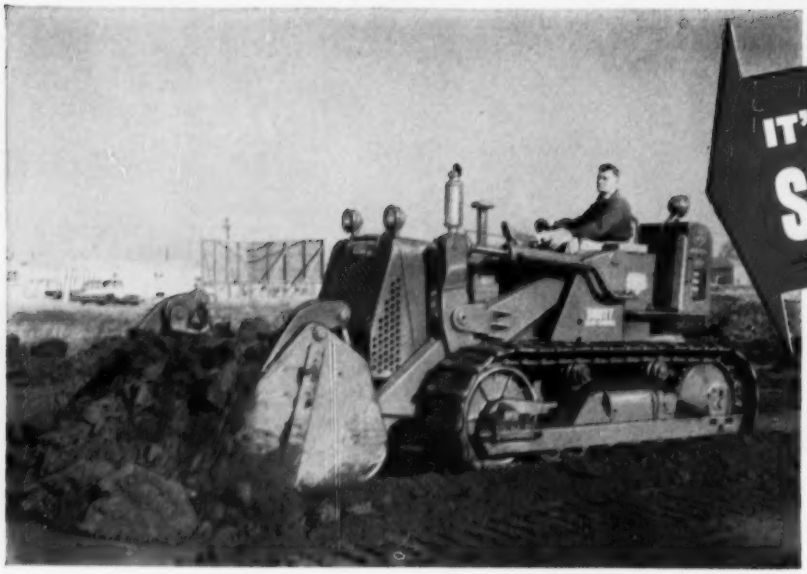

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for one moderate investment!

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with clam open in bulldozing position, the big-capacity earth-rolling blade has cutting edge and shoes on the ground. You regulate depth of cut with ease and accuracy by hydraulic "radius control" of blade pitch (forward and backward).

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How to CUT CLEARING COSTS

To help you clear land faster and cheaper, here are NEW IDEAS developed by clearing specialist Wade Lahar Construction Co. These "tricks" will help Lahar and their 22 International tractors finish a 23,500-acre job at Buford Dam 7 months ahead of an 18-month schedule.

One pass levels 18-inch trees—Where clearing to ground level is your primary job, Contractor Lahar recommends a big International tractor and V-shaped cutter. The cutter shown was designed and built by Herman Hackler, project manager, at Lahar's home plant in Mountain Home, Arkansas. Four 200 hp International TD-24's, so equipped, are handling most of the Buford Dam reservoir clearing near Atlanta, Georgia. In typical operation, they cut over so much land that 18 other International tractors are

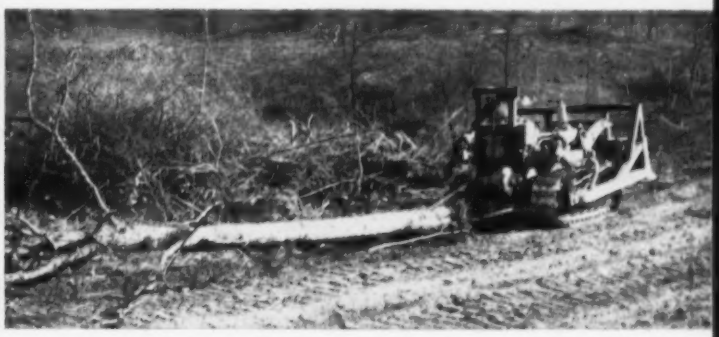
1-to-5 slopes, 1,300 acres per month—Your TD-24 will efficiently clear trees from steep grades as well as from level ground. Here's what Herman Hackler, project manager for Lahar on the $1,611,560 contract, says about this big 200 hp, 8 mph crawler: "TD-24's high-low steering range keeps cutter against the tree until it falls, even on steepest slopes. This factor, plus the "24's" great power, excellent traction, and over-all balance, is letting us crawler-cut 99% of our Buford Dam job, despite slopes averaging 1-to-5, and, in some places, 1-to-4. Our fleet of *22 International tractors*—11 TD-24's (four of them with cutters), six TD-18's, three TD-14's, and two TD-9's—clears and rakes 1,300 acres per month. This production, in our opinion, could not be exceeded by any other make of tractor!"

Burn, turn with one tractor—On big jobs, Mr Lahar suggests use of one medium-sized tractor t handle burning of brush piles. This leaves bigger ma chines free for production work. Note how clear th raked ground is behind tractor. When Lahar's job i done, some 14,000 acres will be completely cleared about 9,400 acres partly cleared, with some trees lef standing in the water to benefit future water life

Team decking boosts output—Where terrain permits three to six of Lahar's 22 IH crawlers team to rak and pile the cut brush and trees. This gives two ad vantages . . . (1) rakes, by catching both ends of falle trees and brush, pick up material lying between trac tors which normally would require separate pass . . (2) one pass per team is all that's needed to provid a clean swath.

kept busy decking and burning. One pass of their 13-ft long, 14-ft wide blade slices saw-like through brush, pine, and mixed hardwoods up to 18 inches in diameter. For scattered trees up to 12 inches in diameter, a similar though smaller cutter is used on a 66 dhp International TD-14A. Both TD-24 and TD-14 have a canopy of 2 and 2½-inch pipe. This protects operator and machine. Entire canopy and cutter assembly pins to regular A-frame . . . can be quickly detached and interchanged with standard or other special blades.

Blade "saws" larger trees—If your clearing work involves trees larger than 18 inches, here's another idea from Wade Lahar Construction Co. Using same mild-steel cutter blade as on smaller trees, have TD-24 operator "see-saw" back and forth a few times to cut the trunk. Just a few seconds' work with the 64,000-lb TD-24 will topple the tree.



Careful in-the-field maintenance boosts output, too. Left, mechanic uses compressed air to blow dirt and leaves from TD-24 radiator core. Right, special steel tooth, 2½ ft long with 18-inch overhang, is welded to TD-24 blade. Four teeth and top blade extension are used per raking tractor.

Winches logs from swamp—Clearing from marshy areas may present you with quite a problem too. Wade Lahar Construction Co does this work, 1% of their 23,500-acre Corps of Engineer job, with chain saw crews and winch-equipped TD-9 and TD-18 crawlers. After winching in, tractors skid timber to central area.

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Adaptability to all sorts of mechanical situations explains, in large measure, the wide-spread use of TRU-LAY PUSH-PULLS on Tractors and their accessories, Power Shovels, Winches, Road Graders, Road Oilers, Dump Trucks, Snow Plows, Engine-driven Pumps, Rock Crushers, etc.

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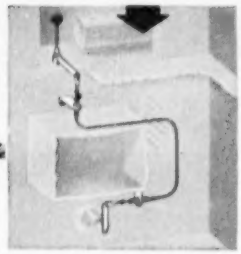

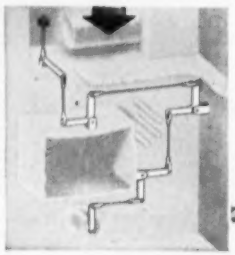

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Reader Comment

Plenty of Wire Reinforcing

SIR—The article "The Steel Shortage Delays Ohio's Big Highway Program" (ENR Dec. 29, 1955) might lead some readers to infer that all highway steel is in short supply.

This is not the fact, and the Wire Reinforcement Institute would like your readers to know that no delays in highway and turnpike construction have been caused by shortage of welded wire fabric reinforcing steel, nor will such be the case in 1956.

The welded wire fabric industry, having invested millions of dollars in new machinery during the past year or two, is prepared to deliver on time sufficient reinforcing steel to meet the demands of all contemplated highway construction.

FRANK B. BROWN
Managing Director
Wire Reinforcement Institute
Washington, D. C.

Wind Formula Revised

SIR—In ENR Dec. 8, 1955, p. 38, is given a wind-pressure formula attributed to the Bureau of Yards and Docks. This needs both a correction and an explanation.

Apparently due to an error in printing, the parenthesis of the exponent in the formula is misplaced. The correct expression is:

$$p = 0.00256 \left(\frac{h}{30}\right)^{2/7} V^2$$

The statement that this formula was developed by our bureau is not correct. The origin of the expression was discussed in an article by W. W. Pagon in ENR May 23, 1935, vol. p. 742. The formula, in the above form, was recommended by a committee on building codes of the American Standards Association and published in 1945 in a National Bureau of Standards publication. We temporarily adopted this formula and made it a part of our bureau design specifications in 1948.

As you may know, since 1945 the

Engineering News-Record welcomes expression of opinion from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance.

Letters should be addressed: Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

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. . . Reader Comment

Bureau of Yards and Docks has been engaged in continuing studies of wind-pressure distribution on buildings. The extent of increase in wind velocity due to increase in height is a part of this investigation. According to the findings of our research, in 1953 we deemed it necessary to modify the above formula in the following form:

$$p = 0.00256\left(\frac{h}{50}\right)^{2/7} V^2$$

This revised expression, and not the original one, may properly be designated as Yards and Docks' or Navy's formula.

ARSHAM AMIRIKIAN
Chief Design Engineer
Bureau of Yards & Docks
Washington, D. C.

Credit for Air Curtain

SIR—We read with interest the article on the air curtain that appeared in ENR Dec. 1, 1955, p. 24. Needless to say, we were disappointed in the fact that no credit was given to the architects responsible — Betz and Bankemper & Associates.

FRED E. BETZ
Betz and Bankemper & Associates
Covington, Ky.

CALENDAR

Mason Contractors Association of America, annual convention, Hotel Kentucky, Louisville, Ky., Feb. 5-8.

Architectural Division, Porcelain Enamel Institute, winter conference, Sheraton Hotel, Chicago, Ill., Feb. 8-9.

Society of American Military Engineers, annual technical meeting, Palmer House, Chicago, Ill., Feb. 9-10.

Association of Asphalt Paving Technologists, annual meeting, Hotel Cleveland, Cleveland, O., Feb. 13-15.

Associated General Contractors of America, national convention, Waldorf-Astoria Hotel, New York, N. Y., Feb. 13-16.

American Society of Civil Engineers, National winter convention, Baker Hotel, Dallas, Texas, Feb. 13-17.

National Society of Professional Engineers, annual spring meeting, Mayflower Hotel, Washington, D. C., Feb. 17-18.

American Concrete Institute, annual convention, Bellevue-Stratford Hotel, Philadelphia, Pa., Feb. 20-23.

American Concrete Pipe Association, annual convention, Broadmoor Hotel, Colorado Springs, Colo., March 6-10.

Fifth Inter-American Sanitary Engineering Congress, Lima, Peru, March 19-25.

Purdue Industrial Waste Conference, Purdue Memorial Union, Lafayette, Ind., May 15-17.

Prestressed Concrete Institute, second annual convention, Hollywood Beach Hotel, Hollywood, Fla., May 16-18.

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Many folks think Groundhog Day comes once a year, but you can see MY shadow every day — I represent the spirit of Marion and I'm on the move, going places. You'll never see me physically except in print, but you'll find my shadow around every Marion machine. I'm the invisible helper who makes your Marion air controls work so easily and smoothly, who packs the Sunday punch that wins on extra heavy jobs. I help give you the stability, speed, power, and strength you like on your Marion. I'm the guy, too, who will help you get the service you need, when you need it.

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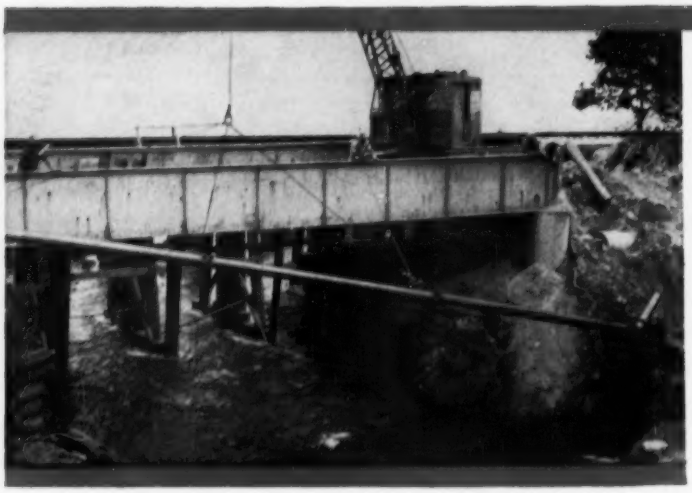

Installing 6-inch Mechanical Joint cast iron pipe for pressure sewer river crossing to sewage treatment plant at Marquette, Mich.

If you were to put *your own money* in a pipeline that should be as nearly permanent as brains, hands and machines could make it, what pipe would you buy? Cast Iron Pipe, undoubtedly! And why? Because cast iron mains are in their *second century* of service in nearly *seventy* cities. *Modernized* cast iron pipe, as made today, is even tougher and stronger. Since everybody pays taxes, one way or another, everybody benefits when you install long-lived cast iron pipe. For further information, write Cast Iron Pipe Research Association, 122 So. Michigan Avenue, Chicago 3.

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everybody benefits!

Laying 16-inch cast iron pipe for water line to new Caterpillar Tractor Company plant at Decatur, Illinois.

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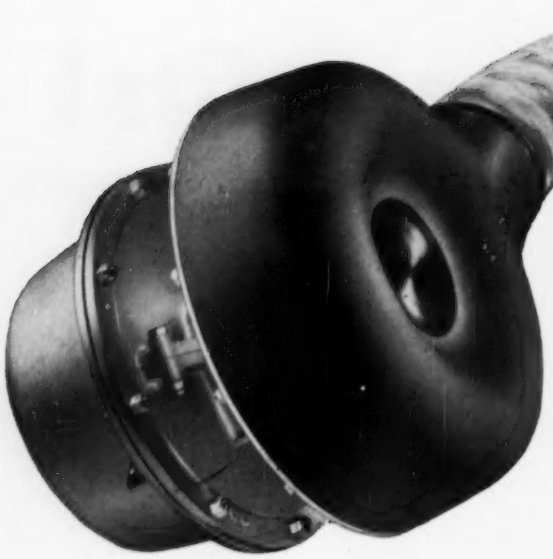

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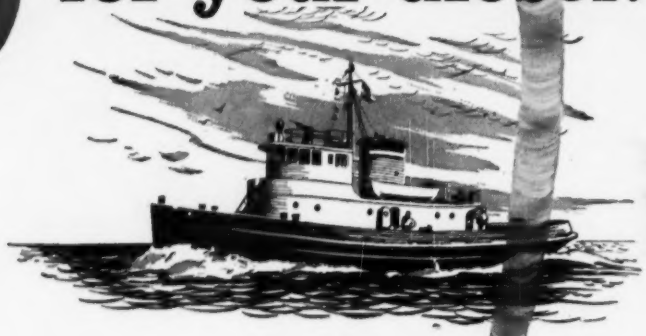

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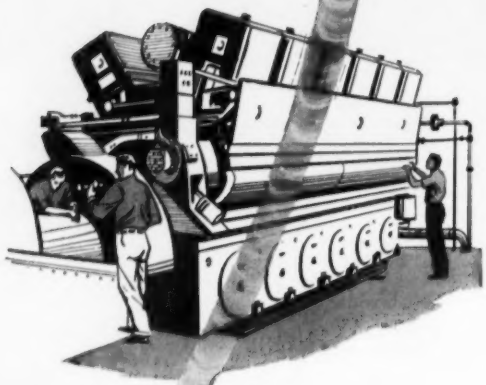

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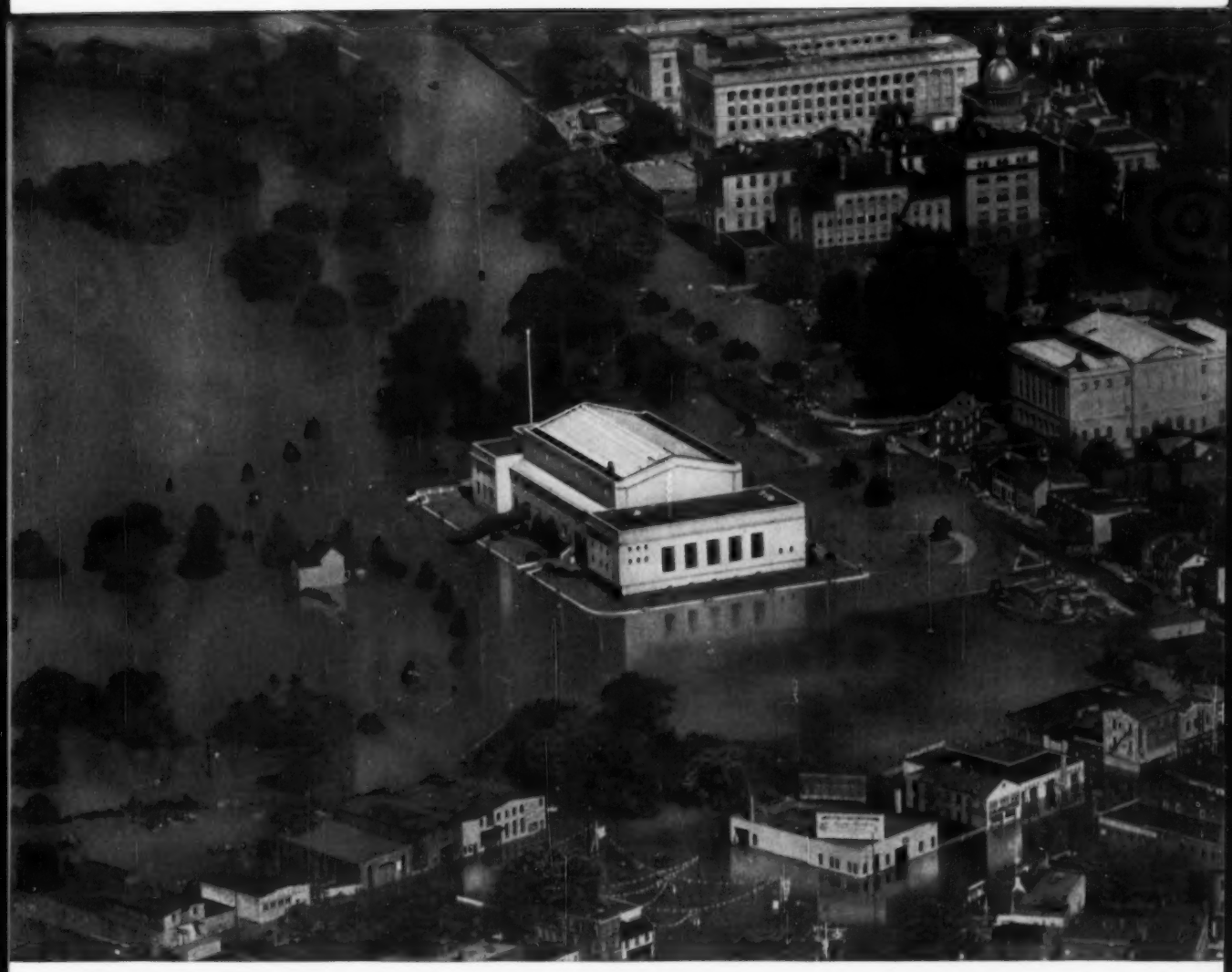

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If you are planning to build in an area that may possibly be affected by flood conditions, your best insurance is dependable foundation construction. While replacing stock and equipment as a result of flooding is certainly not a simple task, it is nothing compared to the repair or reconstruction cost of a complete building or plant.

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The dream pipe for which all engineers pray would be light as a feather, indestructible, pliable enough to bend around obstructions, and would be installed by a magical machine that digs the trench and extrudes, lays and backfills the pipe.

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ENGINEERING NEWS-RECORD

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Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Price 35¢ each copy except Annual Cost Issue. Semi-annual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in Industrial Arts Index and Engineering Index.*

THE CONSTRUCTION WEEK

THE HOMEBUILDER'S PLIGHT—Once again—This time at their annual convention in Chicago—the National Association of Home Builders had an opportunity to review the problems facing its members in 1956 (see page 21). Although the topics of conversation were generally the same as those reviewed at the round-table discussions held in Washington three weeks ago (ENR Jan. 26, p. 99), there was one new note of warning introduced. Labor Secretary James P. Mitchell forecast a critical shortage of skilled labor unless the number of apprentices annually in training is upped from the present 80,000 to the required 300,000. But although this had not been discussed fully before, the builders were apparently one step ahead of the Secretary. Highlight of the exhibition at the Coliseum was a display of how automation can speed homebuilding. Maybe this is part of the answer to the problem voiced by Mitchell.

TIGHTER MARKET FOR ENGINEERS—Present indications are that most of the 1956 crop of graduating engineers will get starting salaries of at least $400 a month, plus moving expenses. This was disclosed in New York last week at the Second General Assembly of Engineers Joint Council (page 23), which is now conducting a survey of engineering supply and demand and economic status. Although the survey will not be completed until spring, indications are that it will show a continuing engineer shortage for many years ahead and give further impetus to growing interest in engineering technicians. Last year, for example, Pennsylvania State University turned out its first class of two-year technical graduates—200 of them—and their starting salaries ranged from $325 to $400.

AND NOW, THE BEAVERS—Eight-hundred carnivorous construction men sat down to eat in the Los Angeles Statler last week, looking like most any other black-tied banqueteers, yet calling themselves Beavers. A West Coast eagerness for an exclusive social club such as New York's Moles and Chicago's Ground Hog Club had come to fruition (page 25).

THE PIKE BUSINESS—Ohio Turnpike officials admit that the first three months' traffic over their 241-mile east-west superhighway has been disappointing. But, they also have a basis for taking an optimistic outlook, particularly in respect to commercial vehicles.

Truckers have been steadily adding to their turnpike mileage during October, the first full month of operation between the Indiana and Pennsylvania borders, 101,670 trucks used the facility. Each of the succeeding months registered a 6% gain. In December, trucks comprised 18.7% of the turnpike traffic and paid 38.1% of the tolls.

FAST, ECONOMICAL BRIDGE CONSTRUCTION

with ARMCO STEEL PIPE PILING

Exposed Pile Bent Construction

- *Saves Time*
- *Saves Formwork*
- *Saves Materials*

These three bridges illustrate some of the advantages of exposed pile bent construction with Armco Steel Pipe Piling. See how Armco Pipe Piling helped solve both engineering and construction problems.

Formwork is held to a minimum, time and materials saved. Here concrete is poured in Armco Pipe Piles for New Mexico's Alameda Bridge across the Rio Grande River.

Pile bent construction is easily adapted to large bridges or small ones like this structure in Eau Claire County, Wisconsin. Pipe Piling used here was 14-inch diameter, .188" wall thickness. The wide range of diameter-wall thickness combinations of Armco Piling makes it easy to specify exactly what you need.

With most jobs there is no need to divert the stream or dewater the site. Cast-in-place Armco Pipe Piles stay water-tight under the impact of driving. Water is no problem.

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ARMCO PIPE PILING

WASHINGTON OBSERVER

The tax-raising half of the highway construction bill is already shaping up. This week House leaders are publicly discussing a package of excise tax increases which they say might bring in an additional $18 billion over the next 13 years. The increases might go like this:

Manufacturer's excise tax on trucks would go to 10% from the present 8%.

Federal tax on diesel fuel might go up one or two cents from the present two cents per gallon.

Tire excises would be boosted, too.

Chairman Fallon has introduced the spending program to go along with this. It calls for $25 billion of federal funds for the interstate system over 13 years, which would include the $18 billion of new taxes planned. One controversial provision: It calls for credits to states for existing toll highways.

•

$500 million of construction is involved in Eisenhower's health program which went to Congress last week.

The plan is to grant $250 million over a five-year period, but this has to be matched dollar for dollar by the non-federal medical schools and research institutions. These can be state, local, or private. In his budget the President has asked Congress to approve $40 million for the first year of the program, beginning July 1.

Extension of existing federal aid to hospitals for two years also gets the President's backing. The Hill-Burton fund for grants will be increased by $130 million in 1957, if Congress approves the Administration's request in the new budget.

•

Eisenhower backed a permanent water pollution control law in his health message last week. His message is pretty much in line with the modified Administration bill passed by the Senate and favorably reported by a House committee last year. The bill would allow last-resort court action by the Secretary of Health, Education, and Welfare if he has the consent of either the polluting state or the complaining state.

The President also asked for more money for air pollution research to be conducted by federal and non-federal agencies.

•

Prospects are brightening for Congressional approval of an anti-bid-shopping bill, which would require each bidder on a federal project to list the names of specialty contractors who would work on the job if he got the contract.

Favorable House action now seems likely. Chairman Celler of the Judiciary Committee has given the Senate-approved measure to a subcommittee that's favorably disposed toward the bill. Opponents of the bill concede that the measure will be favorably reported to the House by the full committee.

President Eisenhower will be asked to veto any such bill by a fairly imposing list of agencies. They say the tax-payer would wind up paying more for a given project just because the prime contractor wouldn't be able to shop around for the best deal.

•

Organized labor's stand may help Congress in passing school construction bill. Up to now it had been assumed that labor leaders would back the amendment being pushed by Rep. Powell to prevent distribution of funds to states not complying with the Supreme Court's school integration decision.

Union leaders now say that the amendment isn't needed. Their lawyers tell them that the court's decision already has the same effect.

Shovel-Crane owners!

Working a hard 8 hour day... getting only 6½ hrs. output?

Operator fatigue can cost you important money. Here's how to minimize it!

THINK about the job you're working now. How much *more* money could you make if operators—good as they are—suffered little if any end-of-the-shift-letdown . . . never had to climb out and unlimber "cramping" arm and leg muscles?

Fingertip-operated Link-Belt Speeder power hydraulic controls minimize fatigue

With Speed-o-Matic—the true power hydraulic control system—shovel-crane response is fast, positive, easy. So easy that operators are actually "eager" to push the rig to its limit—all shift long! And what a limit!

You've never seen any machine that can compare with a Link-Belt Speeder for cat-quick agility and long-lived, bulldog stamina. Report after report shows these rigs account for up to 25% or more output per shift.

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The precision construction, the quality materials and the advanced engineering that have gone into today's Link-Belt Speeder speak for themselves. All we ask you to do is see your distributor and judge for yourself. Be as critical as you like! No shovel-crane on the market today—crawler or rubber-tired, ½ to 3-yd, 8 to 60-ton capacity—can compare. Visit your distributor today or write for literature—LINK-BELT SPEEDER CORPORATION, CEDAR RAPIDS, IOWA. 13.98

LINK-BELT SPEEDER

Builders of a complete line of crawler and rubber-tired shovel-cranes.

Apprentice deficit underlined as NAHB takes . . .

A Look at the Homebuilder's Problems

The construction industry was warned last week that it faces a critical skilled labor shortage unless vigorous action is taken to step up apprentice training.

Labor Secretary James P. Mitchell, speaking at the 12th annual meeting of the National Association of Home Builders in Chicago, placed construction's annual need for new apprentices at a minimum of 300,000, compared to about 80,000 that have been going into training each year.

As to the outlook for homebuilding this year, delegates as well as speakers at NAHB's five-day exposition and meeting offered a wide range of predictions. The common denominator was that the field of housing and apartment-house construction is becoming more and more competitive and that as a result homebuilders are diversifying their activities to a significant extent.

• **Diversification of activity**—Corridor and lobby conversations with rank and file homebuilders indicated that many have found it more profitable to branch out into such allied construction fields as shopping centers, small-to-medium sized commercial or industrial buildings or institutional construction.

Program speakers emphasized three other promising fields of activity opening up to homebuilding contractors. Foremost is the new impetus to home modernization, which promises to be a $10-billion business this year. Another is urban renewal and rehabilitation, rapidly gaining acceptance by municipalities all over the country. And, stress was put on the mounting pressure to accelerate development of streets, sewers, water mains and other community facilities needed for the expansion of homebuilding. The cost of such facilities might well run $20 billion per year for the next decade, it was pointed out.

• **Apprentice training**—Secretary Mitchell's remarks on apprentice training struck a responsive note because a number of homebuilders considered the scarcity of skilled labor as one of their major concerns—despite all the labor-saving devices now available or in the development stage.

One of the biggest problems of the construction industry, including homebuilding, during the next 10 years, warned Mitchell, will be the lack of skilled labor to do the work that must be done. During that period the labor force of this country is expected to increase from 11% to 14%. At the same time, our national productivity is geared for a 25% increase. Consequently, to attain these goals with an insufficient supply of skilled labor, industry must find new ways of accelerating technological developments and construction improvements, he declared.

• **How many starts?**—In general, predictions as to the number of new starts this year were somewhat more optimistic than the concensus of the round-table discussions of 30 NAHB homebuilders held in the association's National Housing Center in Washington, D. C. on Jan. 17 (ENR Jan. 26, p. 99). According to a convention release of NAHB, the number of housing starts anticipated this year in the 30 metropolitan areas represented at that meeting will average 7% less than the number of starts that were recorded for last year.

New NAHB President

Joseph B. Haverstick, NAHB's 1956 president, is also president of Haverstick Builders, Inc. of Dayton, Ohio. Prior to his election, he was first vice president of the association and also served successively as NAHB treasurer, secretary and second vice president.

Projecting this percentage cutback on the national program of 1,330,000 starts last year would mean 1,237,000 housing starts this year. But, as the head of a large eastern savings institution put it, "even with a 7% or 8% cutback this year, the dollar volume of home construction will at least equal the record-breaking $16.6 billion in 1955, due to increased costs."

Secretary Mitchell was inclined to go along with the estimate of 1,200,000 starts this year. But HHFA Administrator Albert M. Cole stood pat on his prediction last month of 1,300,000 non-farm housing starts During 1956. And NAHB's Executive Director, John M. Dickerman, went even farther, for the long-range outlook. For 1956, he sees the number of starts declining as much as 100,000 below last year. But for the early and mid 1960s he foresees housing demands ranging up to 1,700,000 per year.

These and other figures on housing requirements didn't seem to impress the average builder, however, for his problems are much closer at hand. He has to gage his own market, cope with materials and logistics problems, and solve financial puzzles dealing with such complex and variable factors as minimum down payments, maximum mortgage maturities and Federal Reserve discount rates.

As one midwestern builder summed it up: "In predicting the number of housing starts this year you can be like the pessimist who said, 'the jar's half-empty,' or like the optimist who said, 'it's half-full.' In other words, a decline in the number of starts this year of 7% or 8% below last year, will still be greater than for 1954."

• **Financing outlook**—Like predictions on 1956 housing starts, the outlook for mortgage money depended on who was talking. One eastern banking of-

ficial assured his listeners that "Mortgage money available for financing new home construction and purchase will be sufficient to support a continued high volume of building, especially in the New York area."

In another panel discussion on Financing, the Homebuilders heard a midwestern life insurance executive predict that insurance companies would invest more funds in housing developments this year than last year's banner program of $6.5 billion. And two midwestern bankers predicted "ample mortgage money for homebuilding this year . . . but at slowly rising prices."

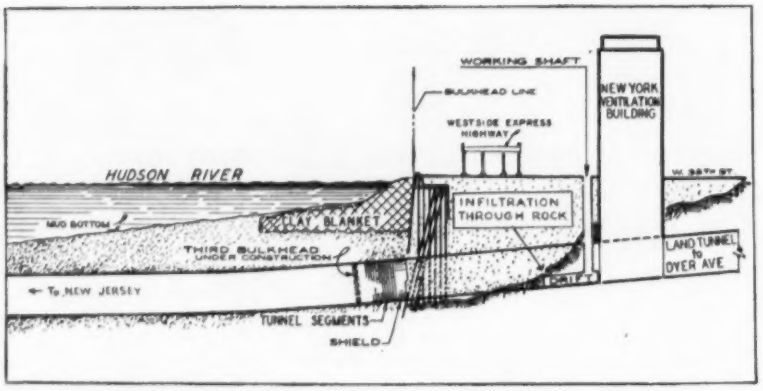
This all sounded good to the builders but, as one brief elevator-conference concluded: "It's still a problem of convincing our lending interests that homebuilding is a solid investment."

NAHB convention activities, including exhibits of materials and housing components by more than 400 manufacturers drew a total attendance of 25,000 or more.

• **New officers**—The homebuilders elected Joseph B. Haverstick, Dayton, Ohio, as their new president, succeeding Earl W. Smith of El Cerrito, Calif. George S. Goodyear, Charlotte, N. C. and Nels Esseverin, San Diego, were named first and second vice presidents, respectively. Carl Mitnick, Merchantsville, N. J., is the new treasurer and Martin L. Bartling, Jr., Knoxville, Tenn. secretary. Twenty regional vice presidents were either elected or re-elected by the board of directors to help run the affairs of the association, with its membership of 36,600; up 12% above a year ago.

• **A disappointment**—From the builders' standpoint one of the disappointments of the meeting was the meager progress report on the air-conditioned village of Austin, Texas. This study of the benefits of year-around air-conditioning is based on tests conducted during the past year on 21 houses comprising the village. It is sponsored by the Research Institute of NAHB, in cooperation with the National Warm Air Heating and Air Conditioning Association; the Air Conditioning and Refrigeration Institute; and several manufacturers.

It had been hoped that a full report would be made at this meeting. In commenting on the study, project manager Ned A. Cole, said that to date $135,000 has been spent on research alone. One finding he was able to report was that tests made in 21 houses over the past 12 months showed the average operating cost of the heating-cooling system was $9.41 per month.



Water Stops Rock Drift Work on Tunnel

Late last week, as the result of an anticipated "accident," two centrifugal pumps started spewing forth an estimated 2½ million gallons of water that had seeped into the third tube of the Lincoln Tunnel. The chance that this could occur had been foreseen, but everything did not work out as planned.

Here's how it happened. The tube, which has been under construction since February, 1953, was being shield-driven from the New Jersey side, while a hard-rock crew put the finishing touches on an 8-ft dia drift extending riverward through rock toward a meeting with the shield. A concrete cradle was to be cast in the drift to receive the approaching shield which had reached a point 300 ft away.

At 4:20 a.m., a pump operator noted that water was entering the drift faster than the pumps could handle it. An attempt to close a 5 x 6-ft steel door, which would seal off the drift from the land tunnel behind it, failed and the drift and the construction shaft that served it had to be abandoned to the rising water.

The water rose to a height of 28 ft in the construction shaft, and invaded the land tunnel to a point 400 ft from the drift bulkhead. It was not until that afternoon that a diver managed to close the bulkhead door. Meanwhile, a dike was thrown up across the month of the land tunnel to prevent flooding of the east-bound traffic plaza, but as it turned out, the water never reached the dike.

• **What follows the pumping**—As of press time, no definite plans had been made for attacking the infiltration, but several alternatives were being considered pending an inspection of the drift after it had been pumped out. A second bulkhead—this one in the form of an airlock—will be erected and air will be introduced.

If pressure can be maintained and the water controlled, work in the drift can proceed as originally planned. Grouting of the rock barrier is, however, an anticipated possibility in which case all of the rock will be taken in through the shield as it advances.

Three Cities Work on Cures For Downtown Traffic Ills

Three congested cities—New York, San Francisco and Cincinnati—are trying to work out new plans for taking traffic pressures off downtown areas.

New York City's acute problem is being scrutinized by 60 of the country's foremost traffic specialists at a conference called by New York University. The experts—in an attempt to come up with a program for moving traffic faster—will weigh the city's needs, obtain viewpoints of specialized interests, and exchange professional experience.

In San Francisco, construction of the $2.4-million Ellis-O'Farrell parking garage will start about April 1. The 12-story building will feature stores and offices on the first two floors in adition to pigeon-hole parking for 900 cars (ENR May 12, 1955, p. 28). Meanwhile, the San Francisco Parking Authority has approved a plan to lease land under the Bayshore Freeway plus part of an adjacent playground from the state as a site for an 1,800-car parking project.

In Cincinnati, the City Engineering Department has suggested construction of a multiple-deck garage or a series of garages south of Second St. The plan was proposed after Mayor Taft came out against a parking project under Fountain Square. Meanwhile, other city officials have opposed a plan for deck parking over the Third St. distributor. Objections are based on claims that: (1) The parking project would destroy the distributor's design, and (2) ramps leading to proposed garages would kill the connection to the Northeast Expressway.

With revised building designs . . .

Air Academy Gets Fresh Start

Air Force Academy design and construction have gotten off to a fast, fresh start under the leadership of Secretary Donald A. Quarles. Air Force construction officials feel confident that revised designs approved by Quarles will satisfy Congressional committees and lift the freeze on the additional $80 million of appropriations needed to complete financing of the $125-million project.

Quarles and his three architectural consultants meet in Chicago this week to appraise and approve final designs for two buildings and the general landscaping plan for the entire Colorado Springs site, which spreads over 27 square miles of land against the back drop of the Rocky Mountains.

Structures to be approved this time are the cadet social center, the administration building and the cadet guest house. They will increase the total number of building approvals to eight. The Secretary already has okayed design of the cadet quarters, dining hall, academic building, library building and gymnasium. He also has endorsed the road network for the site, although the overall master plan has not yet received final approval.

A fast schedule is required to meet the new target date for opening the academy in 30 months, by the summer of 1958. Before May 1, the academy construction agency expects to let contracts totaling $28 million. Already under way at the site are contracts for $7 million. They include part of the road system, the main sewerage lines and the water-supply lines and reservoirs.

Basic layout and design of the buildings has not changed much as a result of the furor stirred up in the House Appropriations Committee last year. In broad concept and main outlines the buildings on the approval list follow the ideas developed in the original study. But the harshly criticized chapel design has been shelved for complete restudy.

In exterior appearance and details, however, building designs are sharply altered. Glass area, for example, has been reduced as much as 80% for the academic building, to less degree for the cadet quarters. Exterior walls now consist largely of stone masonry, with aluminum facing over the outside columns of the steel frames. A test mockup erected at the site will determine whether the masonry shall be Colorado pink marble or some other color of stone.

To make any kind of impression when viewed against the massive Rocky Mountains, the buildings have to be large. As one example, the cadet quarters building, to house more than 2,600 students, consists of a continuous structure some 1,700 ft long, all of it four stories high except for one two-story link about 250 ft in length. The four-story sections inclose three quadrangular courts, and the entire building—on a sloping site—has an open ground floor, with exposed stilt-like columns supporting the inclosed superstructure above.

Skidmore, Owings and Merrill, the architect-engineers, present the designs at the Chicago meetings. Quarles gets his consultative advice from three independent architects, two of whom competed for the academy job themselves.

The consultants are Pietro Belluschi, Dean of Architecture at MIT; Ero Saarienen, of the Detroit architectural firm of the same name, and Welton Becket, who heads Welton Becket Associates of Los Angeles.

EJC Says: Turn to Technicians

More efficient use of existing professional talent and greater attention to development of the engineer beyond his purely technical capacity were suggested last week as partial antidotes to the current shortage of engineering manpower.

Those who participated in the Second General Assembly of Engineers Joint Council in New York were confronted with the ominous fact that a nation that needs 40,000 engineers a year is now producing about 24,000, one-third of whom are ROTC graduates. It was predicted that this imbalance will continue for many years.

Emphasis was placed on the utilization of engineering technicians as a logical and practical method of extending engineering manpower. Two-year technical schools, through their relaxed requirements, it was said, can conserve the inadequate supply of able students, and through their briefer course can make almost immediately productive some of the technical skills which are necessary.

As technical aides become available, it was suggested that they be employed along with engineers as part of a balanced team that will make the maximum use of all skills and levels of experience. Increased performance of routine work by aides will release the professional engineer for more important work, and will, in turn, improve the engineer's morale and increase his chance for professional advancement.

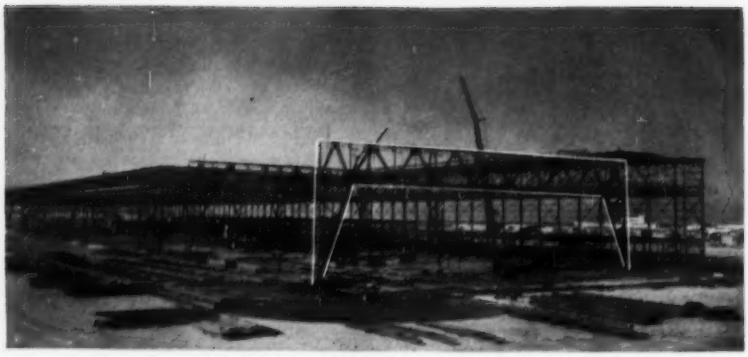
One deterrent to complete reliance on use of aides came from Donald Rollins, engineering vice president of U. S. Steel's American Bridge Division, which is now using electronic data processing equipment as well as technicians. His observation was that a certain amount of routine work—principally in the drafting room—must be reserved as the training ground where young engineers "learn the facts of life." In his organization, for example, there are 1,120 people in the drafting room. Of these, 70 (mostly engineers) are supervisors; 250 are engineering graduates (half of whom will move up the ladder); the rest are technicians.

John Volpe, Massachusetts Commissioner of Public Works, pointed out the difficulty experienced by government agencies in maintaining balanced teams because of having to compete with private industry in attracting and retaining engineers. He reported that in the past five years, his organization has hired 150 engineers and retained only 60; it has hired 450 technicians and retained only 200.

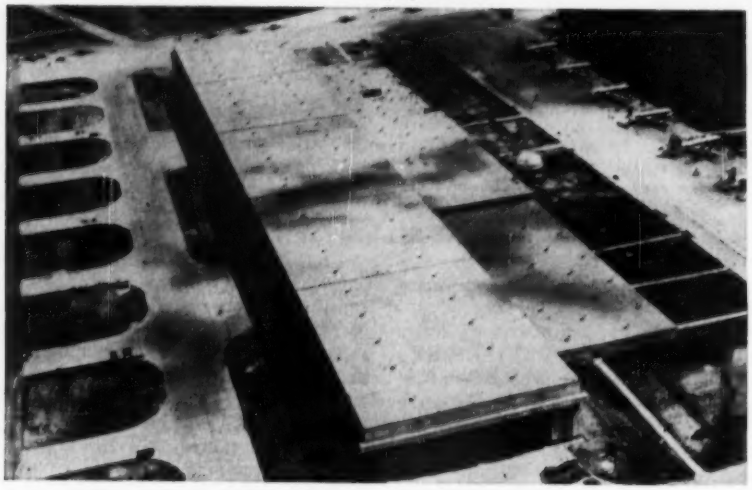
Post graduate growth of the engineer was recognized as a concurrent problem in the maximum utilization of engineering manpower and in the attainment of professional status. Components of the problem were said to include the sacrifice of technical ability—and often professional advancement—as an engineer moves into the administrative, sales or production fields, and the inability of many engineers to supervise or direct the activities of others.

As some solution to the problem, engineers—who found it easier to solve technical problems than social ones—were urged to improve their skill in the communicative process between human minds as well as their skill in human relations. These skills were also described as the links between technical ability and the accord which an engineer receives as a professional.

In line with this, one panelist recommended use of the participating or consultation form of modern decentralized management, through which engineers on even the starting levels would acquire a knowledge and understanding of management problems and a broader viewpoint. In the long run, he predicted, such a system is the key to generally higher economic status for engineers.



Rigid-Frame Truss Supports . . .



. . . The World's Biggest Hangar

The world's largest maintenance hangar will be completed next month at Kelly Air Force Base, San Antonio, Texas. The mammoth building is 2,000 ft long, 300 ft wide and 19 ft high.

Along one side of the structure is a shop and administrative building that is worthy of recognition on its own. It is 1,650 ft long by 250 ft wide. Total area of the two structures tops 1,000,000 sq ft.

Together with a 300,000-sq yd concrete apron, 16 in. thick, the entire project costs $13 million. It is claimed to be the first of its kind to allow maintenance of planes on a simultaneous "production line" and "stall" basis for all types of aircraft.

Framed in steel with riveted connections the hangar consists of five independent units, each 400 ft long. This modular system was chosen because it offered economy, alleviated thermal and settlement stresses, and provided future expansion in identical bays already designed and detailed.

• **Economical framing**—Key elements in the structure are two-hinged rigid-frame trusses that support the roof framework and span the full 300-ft transverse dimension of the building. Perpendicular to these, and framing into them are ten 250-ft span trusses, with a 74-ft overhang at each end. By cantilevering the ends of these trusses, the designers were able to decrease the positive movement in the trusses by 36%, thereby reducing the steel needed.

Besides carrying the total roof load of 51.5-psf and dead weight of roof framing, the rigid-frame trusses also carry the load from three 5-ton overhead cranes. In addition, these frames were designed to take a horizontal force of 358 kips. The resulting stresses dictated a trussed frame construction of 14-in. wide-flange sections—with cover plates where needed.

The top-chord centerline of the rigid frames is 1 ft 3 in. higher than the top-chord centerline of the overhanging trusses to allow the top chords to clear each other, while the bottom chords frame into each other. This design eliminated the need for complicated top-chord connectors.

Hung-span construction was used for the roof purlins. These span 36 ft between overhanging trusses and cantilever about 52 ft into adjoining spans to support the ends of purlins there.

Over the purlins, the flat roof is covered with a 20-ga metal decking and 4-ply builtup roofing. The metal decking is welded to the purlins for lateral bracing.

The 12,000 tons of structural steel used on the project were fabricated and erected by American Bridge Co. Farnsworth & Chambers of Houston, Texas were general contractors.

Kuljian Corp., engineers and constructors of Philadelphia, Pa., did both engineering design and construction inspection for the project under the direction of Air Installations Division, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio.

B. R. Van Leer Dies

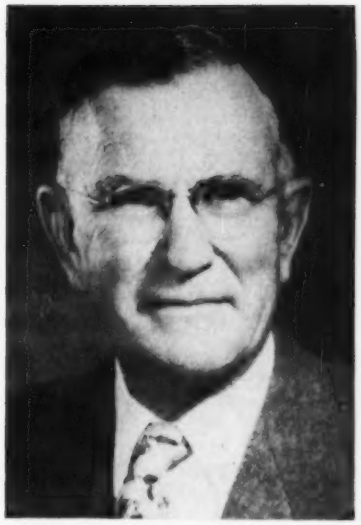
Georgia Tech president was engineering leader

After nearly four decades of service devoted to advancing the engineering profession, President Blake Ragsdale Van Leer of the Georgia Institute of Technology died of "overwhelming coronary thrombosis" on Jan. 23. He was 62.

The fifth president since Georgia Tech's establishment and the first engineer to hold the position Van Leer took office in July 1944. At that time he found an enrollment of 2,911 resident students and 3,061 students in the Engineering Extension Division. Eleven years later, the enrollment had grown to 5,762 residents and the extension students numbered 12,220. Further, today there are more than 300 graduate students compared to six in 1944.

His posts in the field of education and as a professional engineer included: instructor and assistant professor of hydraulics at the University of California (1915-28); engineer with the Southern Pacific Railroad and Byron-Jackson Pump Co. (1928-31); assistant secretary of the American Engineering Council (1928-32); Dean of Engineering at the University of Florida (1932-37); and Dean of the Consolidated Colleges of Engineering of the University of North Carolina and N. C. State College (1937-44).

From 1950 until the time of his death, Van Leer also served on the Advisory Committee on Engineers of the U. S. Civil Service Commission, and from 1954 he was a member of the Construction Industry Advisory Council. He was long active in the American Society for Engineering Education.



FIRST BEAVER PRESIDENT, William A. Johnson, presided at first award dinner.

The Beavers Meet

New heavy construction group forms on West Coast

The Beavers came out of the woods last week in Los Angeles to honor 16 of their number for impact on dam building and other heavy construction in the West.

The newly organized social club of contractors and their associates, formed in 1955, held its first award dinner. Prime purpose of the group is to honor those who have distinguished themselves to an exceptional degree in the field of heavy, engineered construction.

Significantly, the Beaver awards honor leading engineers as well as those associated with, but not directly involved in, construction efforts. This latter group includes materials and equipment people, insurance and surety men, technical editors and others who assist construction accomplishments.

In his welcoming message Beaver President William A. Johnson, chairman of the board of American Pipe Construction Co., credited the assemblage with doing more to change the face of the earth than any similar number of individuals ever assembled. Banquet speaker Guy C. Kiddoo, vice president of the First National Bank of Chicago, referred to the awardees as "great men in a great industry." Kiddoo pointed out that construction is responsible for 10% of the gross national product of the United States, an accomplishment of a large number of companies and firms not a single dominant firm, as might be the case in manufacturing industries. Kiddoo also credited U. S. construction firms working abroad with helping spread the gospel of liberty and free enterprise.

First annual awards went to the following men, in the categories indicated:

Management: Guy F. Atkinson, Herman Brown, Henry J. Kaiser, and Harry Morrison.

Supervision: Lee T. Grider, Harvey Slocum, B. Williams, and C. W. Wood.

Engineering: Julian Hinds, B. F. Jakobsen, and Maj. Gen. Thomas M. Robins.

Supply: Nathan Bowers and J. S. Foster.

Posthumous awards were made to William R. Ellis, Guy Leroy Stevick and John P. Shirley, all of whom had been prominent in western construction work until their deaths last year.

The Beavers announced election of L. E. Dixon of L. E. Dixon Co. as new president. No announcement of the 1957 awards dinner was made but the organization plans on moving from city to city in the Far West.

John Day Dam Height Cut To Prevent Flooding Towns

The Corps of Engineers Board of Review in Washington, D. C., has agreed to lower by 27 ft the height of the proposed John Day Dam on the Columbia River in answer to pleas by several Oregon and Washington communities. The towns would have been inundated by a 75-mi-long pool formed at the initially planned 292-ft height. About $40 million will be shaved from a $309-million estimate for the higher dam.

A group of Pacific Northwest utilities that had proposed partnership construction of the dam welcomed the action.

Assurances were given by Brig. Gen. L. N. Foote of the Corps' North Pacific Division that 1,500,000 acre-ft of flood-control storage lost by lowering the dam could be recovered by development of a potential 17,700,000 acre-ft in the Upper Columbia Basin. Only 500,000 acre-ft of storage will be available at the lower John Day.

Will It Be Steam or Atoms When Hydro's Fully Developed?

The Corps of Engineers' far-reaching study of whether to plan on steam or nuclear power when the Pacific Northwest's hydro sites are fully developed took a step forward with recent appointment of a board of consultants to the Corp's North Pacific Division.

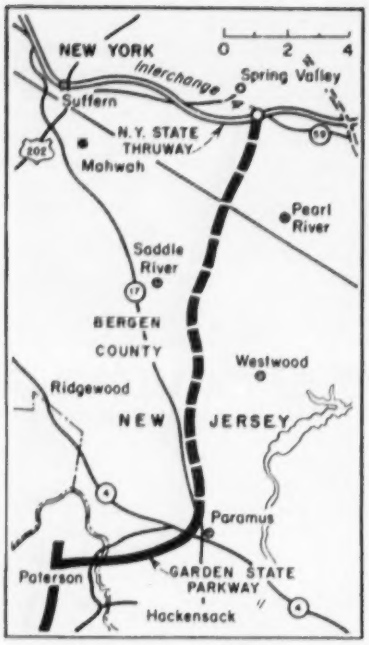
Last fall, Congress delegated the Corps to review the Columbia River 308 Report and revise it as necessary for orderly development of the region.

Board members are Calvin V. Davis of Harza Engineering Co., Chicago; Water H. Huber of Huber and Knapik, San Francisco; Hibbert M. Hill, chief engineer of Northern States Power Co., Minneapolis; and Samuel B. Morris, general manager and chief engineer, Los Angeles Department of Water and Power.

Completion of the revised report is expected to take about two years.

And the Rains Came—to Los Angeles

They said it wasn't a flood in Los Angeles last week—only localized ponding. But it was more rain than the city had had all year, and the storm sewers just weren't up to it. National guardsmen in rescue boats handled evacuations elsewhere.



Thruway Tie-In

Another link mapped out for super-highway chain

The New York State Thruway Authority has mapped out a plan to connect the Thruway with New Jersey's Garden State Parkway at the New York-New Jersey border.

The plan calls for construction of 2¼ mi of toll-free highway on the New York side of the line at an estimated cost of $4.3 million. At the same time, the New Jersey Highway Authority would spend $18 million to extend the Garden State Parkway 9 mi north from the present terminus at Paramus.

The proposed four-lane link to New Jersey would leave the main Thruway east of the Spring Valley toll barrier and run south about 2¼ mi to meet the Parkway extension. It would be constructed to regular Thruway standards—a 25-ft roadway in each direction, separated by a center mall ranging in width from 20 to 80 ft.

The two-state connection would permit travel on limited-access highways from Buffalo to Deepwater, N. J., on the Delaware border, via the Thruway, Garden State Parkway and the New Jersey Turnpike. Motorists coming from the south and west would be able to by-pass New York City via the Thruway's Hudson River bridge and Westchester County Parkway and reach the Merritt Parkway to New England.

The route, which is planned to pass through undeveloped areas, was recommended by Madigan-Hyland, the Thruway Authority's consulting engineers. The engineers' report already has been submitted to the Rockland County Planning Board as well as to the towns of Ramapo and Clarkstown, through which the New York State portion would run.

Expressway Design Changed To Handle Heavier Traffic

The Missouri State Highway Department has revised the design of the Mark Twain Expressway project by changing its width from six to eight lanes.

The project—part of St. Louis' planned $160-million radial expressway system—will run 20 mi from the downtown area to the Missouri River at St. Charles (ENR Jan. 26, p. 25). Original plans called for six lanes all the way. But because six lanes have proved inadequate in other cities, the Highway Department decided to provide two additional lanes for a 4-mi stretch where the heaviest traffic volume is expected.

The change in width will add 15% to 20% to the estimated $37.4-million construction cost of the expressway section. But it will mean only a small increase in the cost of right-of-way and the $6 million provided for this through the 1955 city bond issue will take care of the additional expense.

Two B. C. Bridge Projects Get the Go-Ahead Signal

Two British Columbia crossings—the Second Narrows Bridge and Capilano Bridge—are expected to be under construction in Vancouver within the next few weeks.

The first project to enter the construction stage will be the $16-million Second Narrows Bridge. This high-level, six-lane span, a three-year job, will cross Burrard Inlet to connect Vancouver and North Vancouver. Construction of the substructure will start on the north side of the inlet, just west of the old existing bridge. A $4.3-million contract for substructure work was awarded at the end of last year to Canadian subsidiaries of Peter Kiewit & Sons, Omaha, and Raymond International Corp., New York City.

The second project to progress from the drawing boards is the $300,000 span across the Capilano River in West Vancouver. Bids have been called for supply and erection of steel for the bridge, which is the first of two planned to develop the cloverleaf at the north end of Lions Gate Bridge and permit faster flow of traffic.

Meanwhile, British Columbia is expected to start drawing up plans for a new Lions Gate Bridge before the Second Narrows Bridge is completed.

City Barricades Block Freeway Work

City barricades thrown up at two entrances to Los Angeles' Griffith Park have stymied work on a $4.5-million section of the Golden Gate Freeway. Erection of the barriers by the City Recreation and Park Commission has stopped contractors from hauling dirt to the Griffith Park-Burbank section of the road project. The move—reportedly made to protect park property—culminates a commission campaign to block the freeway job, which it contends will take 206 acres of park land set aside for recreational purposes. Sealing off the park section reportedly is costing Vinnell Construction Co. between $5,000 and $6,000 a day as well as idling equipment.

Power vs Fish

Power companies get set for fight on Fraser River

A second power company has joined in the battle with Canadian fisheries interests to develop hydroelectric sources on British Columbia's Fraser River. British Columbia Power Corp. has formed a new subsidiary, Western Development & Power Ltd., which started on a conciliatory tack by donating $50,000 to the University of British Columbia for an impartial study of salmon spawning on the Fraser ". . . to develop techniques allowing the benefit of both fish and power."

In December, Moran Power Development Co. became the first entrant for Fraser power by announcing a proposal to British Columbia Lands & Forests Minister R. E. Sommers to construct a $500-million 2,700,000-kw hydro project at Moran (ENR, Dec 29, 1955, p. 24).

Federal Fisheries Minister James Sinclair, "unalterably opposed" to the Moran proposal, toned down somewhat his comment on the latest contender. "We welcome any money for fisheries research but so far research has not indicated any successful way to get fish over power dams. We strongly urge holding up development of the Fraser River. The Columbia (River) is the obvious source of power and when it is used up we will be well into the atomic age," said Sinclair.

B. C. Power Corp.'s president A. E. Grauer also recognized the Columbia's potential by announcing the second project of Western Development & Power Ltd.—a preliminary study of the upper Columbia.

The recent activity stems from the realization that British Columbia's power requirements will double in the next six years if present rate of growth is maintained. The Fraser River is generally considered the next natural source of power of this magnitude, with the Columbia only a fair substitute from the economic standpoint.

Canadian federal authorities, aside from the fisheries people, appear to back Fraser River development. The federal government recently forbade further registration of mining claims on lands that would be flooded by a dam at Moran. This prevents nuisance claims by opportunists figuring to resell the land to an eventual power developer. The action was taken in the face of a strong Fisheries Dept. report opposing damming of the river.

Provincial, federal and power industry officials are all confident that the fish problem will yield to intensive research. Last week B. C. Highways Minister Gaglardi said he was confident a dam will be built on the Fraser and the river's annual $50-million salmon business would not be destroyed.

The extent of possible Fraser River development has not yet been determined. Federal government engineers are now studying feasibility of diverting Columbia River flood waters into the Fraser through tunnels. Canada's right to divert Columbia flow before it enters the United States is recognized in the Boundary Treaty of 1909, but the prospect may cause ripples on the international scene.

City's Dam Stopped

Plans for Tacoma's dam blocked by court ruling

Holding that proposed construction of the $146-million Mayfield Dam project on the Cowlitz River by the City of Tacoma, Wash., would violate a 1909 state law prohibiting interference with navigation, Superior Court Judge Charles T. Wright at Olympia, Wash., announced that he would grant an injunction prohibiting the city from spending any more of the "taxpayers" money on the project.

Tacoma officials immediately announced they would appeal to the State Supreme Court to set aside the injunction until the higher court could rule on the case. Dean Barline, Tacoma's director of utilities, said the city is determined to go forward with the project. Should the State Supreme Court uphold the lower court, the city could turn over its FPC license to private utilities who have expressed an interest in the project and who are unaffected by the 1909 law, he said. Contracts totaling $15 million have been awarded and access road construction has been under way for several months.

Judge Wright ruled that the state had proved the river was used to some extent for public navigation through testimony by Indians who said they had traveled on its waters. Once a river is found navigable, he said, it remains so legally even if not used for 100 years.

The Washington State Fisheries and Game Departments originally sought an injunction from Judge Wright last summer on the basis that state law established a fish sanctuary on the Cowlitz River, and that Tacoma had no right to condemn state property that had been dedicated to a state use.

The judge declined to rule on this question, station that courts of Lewis County, in which the hatchery is located, should decide.

Extended legal battles appear the prospect for beleaguered Tacoma officials.

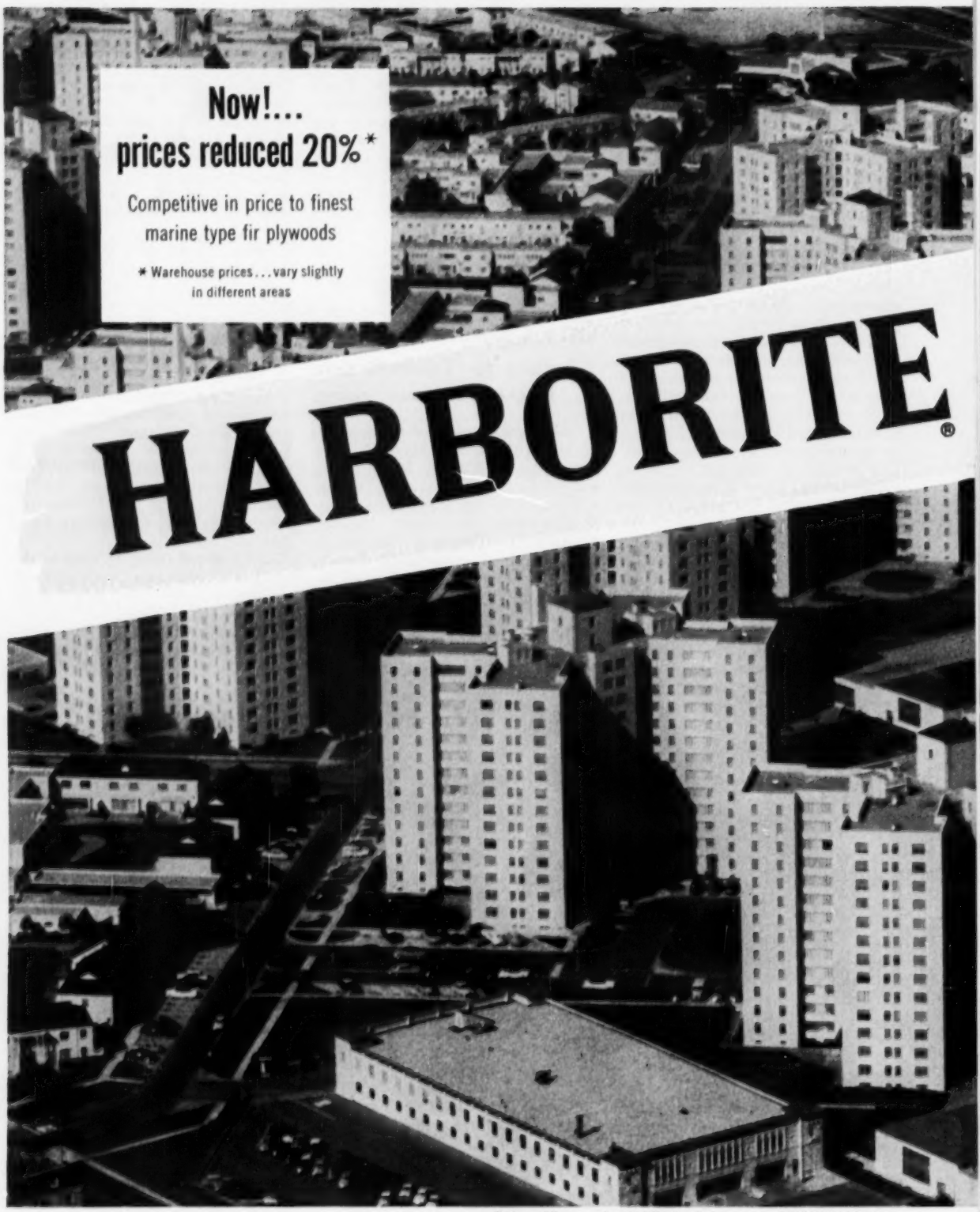
Exorbitant Fees for Engineering Aid?

Charges of collecting exorbitant fees for "engineering assistance" rendered a sanitary engineering consultant have been leveled at a New Jersey mayor, who is also an engineer, in a report prepared for the State Superior Court. In 1953 the court appointed a Newark attorney, Samuel Larner, to investigate allegations by a group of Jersey City taxpayers that municipal funds had been corruptly disbursed. The report is the result.

Harry J. Thourot, long-time mayor of nearby Union City, Hudson County Democratic leader, county engineer, and licensed professional engineer and land surveyor, is charged with obliging Clyde Potts Associates of New York City to retain him so that the New York firm could obtain a consulting contract from the Jersey City Sewerage Authority. Thourot is alleged to have received a $184,000 commission between 1950 and 1953 ostensibly for performing property location and surveying work, but actually as a "necessary prerequisite" to successful contract negotiations between the consultant and the Sewerage Authority. The Potts fee was approximately $1.5 million based on 7½% of an originally estimated $20.5-million job which is now a little over half completed and will cost $31 million.

Weston Gavett and Stanley N. Williams are principals of Clyde Potts Associates. Gavett stated to ENR that the charges were a complete misrepresentation of the facts. He acknowledged the fee paid to Thourot, but claimed value received in the form of comprehensive surveys of many miles of sewer line. Gavett called Larner's charges politically inspired and a rehash of old allegations that had been aired during previous court litigation.

Larner also charged that James Henderson, Sr., City Engineer of Jersey City, had received $10,000 from the consultant for work that was part of his official duties. Gavett denied any payment to Henderson, explaining that Larner was confused by a Potts firm fee paid to Henderson's son, James, Jr., for extensive field surveying performed.



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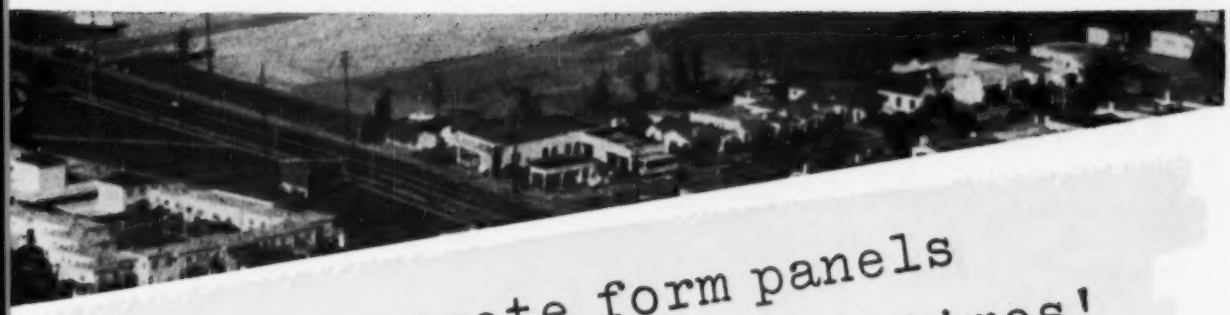

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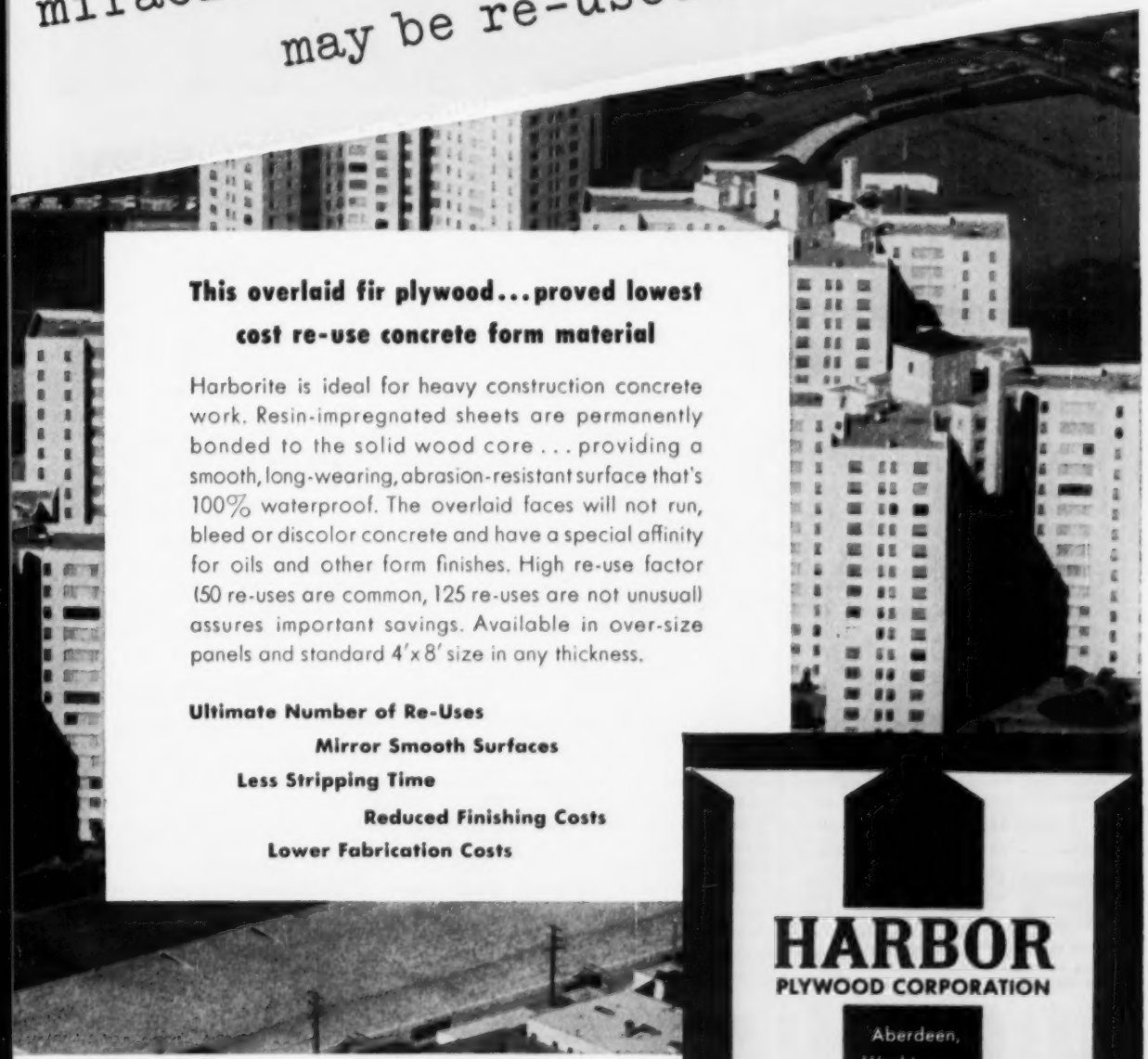

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Anybody Need 100 mgd at 600-ft Head?

Here's a switch on the old joke about the low mileage used car that an elderly couple used only to go to church.

New York City has a 100-mgd pumping plant to sell that has never been more than test-run. It has sat on the east shore of the Hudson River near Chelsea, N. Y., for five years, ready, willing and able—but never called upon—to pump river water into the Delaware aqueduct.

The people who now must get rid of the $2.7-million installation didn't want it in the first place. The City's Board of Water Supply—its engineers historically have abhorred the Hudson as a drinking-water source—was pushed into building this plant by a panicky city administration back in the water shortage of 1949-50. It was completed in haste under an interesting design-construction contract (ENR June 24, 1950, p. 33) and turned over after testing to the city's operational arm, the Department of Water Supply, Gas & Electricity.

Along with permission to build the plant went a ruling of the state's Water Power and Control Board that it be used only in "extreme emergency," and that it be abandoned and its equipment removed, when the Delaware development then under way was completed, or by no later than Jan. 1, 1957. The Delaware work is now done.

No "extreme emergency" developed, and from completion of a 1951 test period until now, the plant has been run only one day each two weeks (one pump at a time for one hour each) for maintenance purposes.

There are six five-stage turbine pumps, each good for 20 mgd against the 600-ft head in the aqueduct at Chelsea. Each pump has a 2,500-hp synchronous motor and all the necessary electrical appurtenances. There are 650 ft of 72-in. reinforced concrete pipe, some 54-in. welded steel force mains, assorted sluice gates, valves, a 54x32 in. venturi tube, two chlorinators, scales, etc.

The DWSG&E can't sell this equipment must leave it to the salvage division of the city's Department of Purchase to negotiate sales. But DWSG&E Commissioner Arthur C. Ford hopes to help find some buyers for the Department of Purchase.

The whole works or any part of it is for sale on a must-go basis. One interested organization considered the whole thing as a hydraulics lab, but didn't buy. Anybody need 100 mgd at 600-ft head?

Highway Link to Seaway Headed for Study Stage

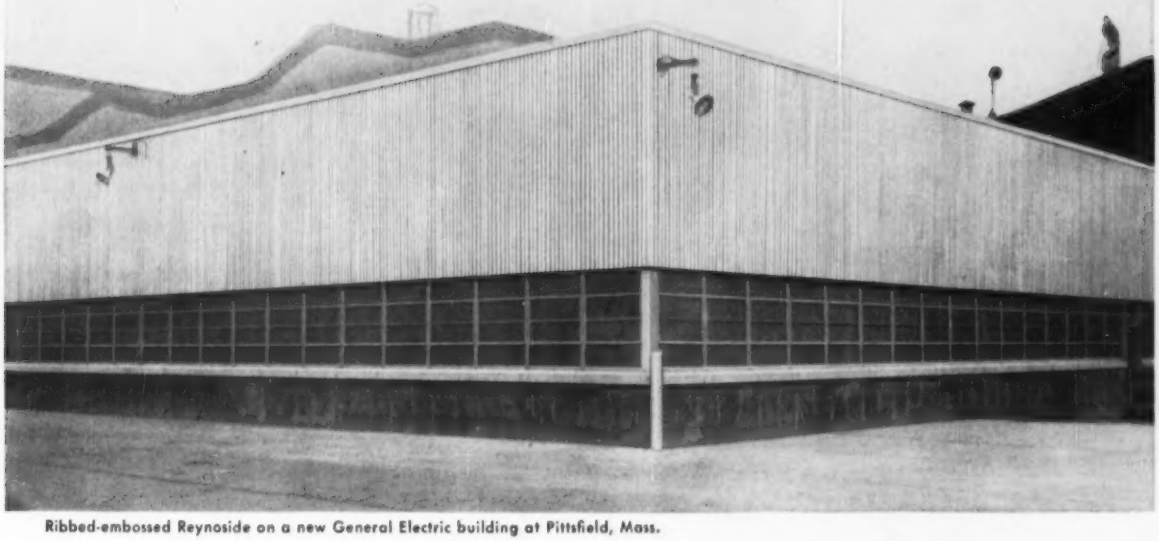
The Ohio State Highway Department is getting ready to award a $75,000 engineering contract for preliminary study of a $75-million superhighway that would link Lake Erie and the Ohio River.

The proposed highway would run 100 mi between East Liverpool and Ashtabula to take advantage of commerce on the Great Lakes Seaway. Present plans call for the project to be completed by the time foreign ships start docking at Lake Erie ports, which will be sometime in 1959.

The new highway probably will be built between existing Routes 46 and 90. Both of these roads parallel Ohio's eastern boundary between Lake Erie and Turnpike No. 1.

A Great Industrial Company again Chooses

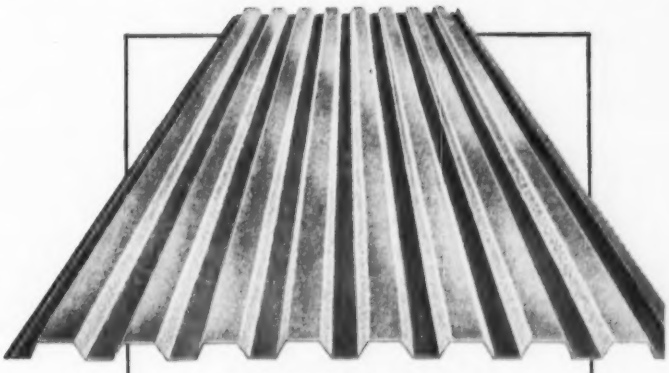
Reynoside



Ribbed-embossed Reynoside on a new General Electric building at Pittsfield, Mass.

For industrial building, Reynoside aluminum siding offers the positive advantages of low installed cost, long life with practically no maintenance expense, modern appearance and radiant heat reflectivity that cuts the cost of year-round temperature control. Reynoside comes in two types... see specifications.

A complete installation service is available. For name of nearest jobber-erector, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. For literature, write to **Reynolds Metals Company,** Building Products Division, 2009 South Ninth Street, Louisville 1, Kentucky.



Reynoside Specifications:
Three Types: (A) 4" rib, .032" thick. (B) 8" rib, .032" thick. (C) 8" rib, .040" thick. Rib depth, 1". **Finish:** stipple-embossed. **Width:** 41⅝" over-all; nominal coverage 40". Weight per square: (A) 59.4 lbs. (B) 53.1 lbs. (C) 66.4 lbs.
NEW! Lengths now available from 5' to 22'5", in 6" increments. Special lengths to order.

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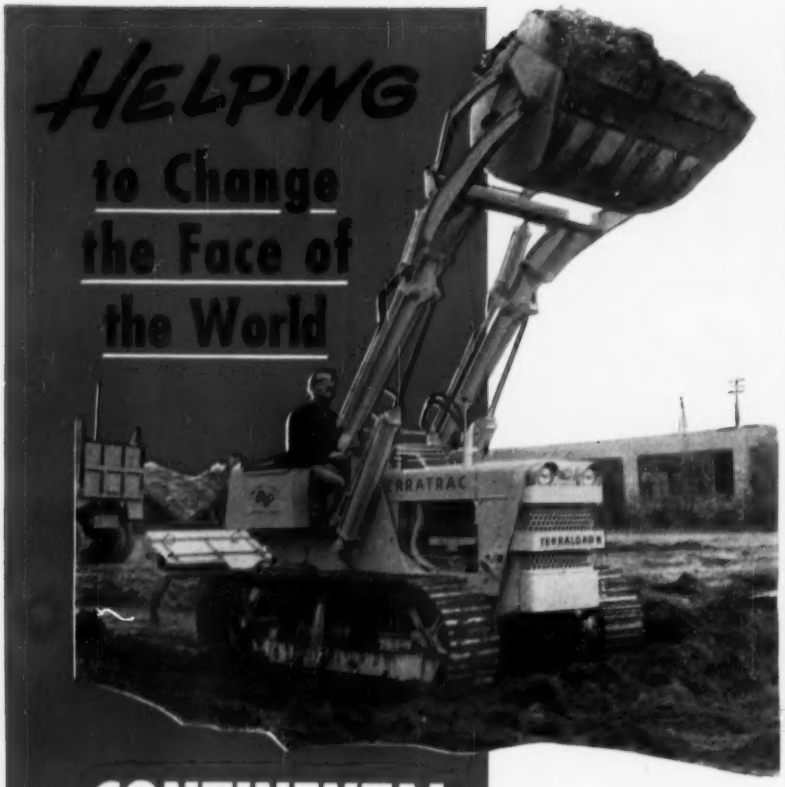

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Fluoridation of New York's Water to Be Considered Again

A third affirmative report by New York City's Board of Health last month again placed fluoridation on the legislative agenda.

Facts and figures presented in the report are the most glowing ever. For nine cents per person per year up to 60% of new dental decay in adults and children can be prevented.

Initial investment is pegged at $450,000; annual operating cost $700,000 (which divided by 8,000,000 New Yorkers gives the 9-cent figure). No recommendation was made, but hydrofluosilic acid will probably be the additive if the program is adopted.

Aside from legislative approval and financing, the city still has some obstacles to contend with. Among them, the sturdy and aggressive opposition of Ben Nisin, Director of NYC Dept. of Water Supply, Gas & Electricity. Nisin had not seen the report when queried by ENR, but referred to his strong 16-worded attacks on fluoridation before American Water Works Assn. groups in the Northeast.

Present forecast on the fluoridation proposal: approval in principle and wait-and-see on the money.

Estimate of Flood Damage To California Highways Raised

The California Division of Highways has made a new estimate of $31.5-million damage to highways and bridges caused by the late December floods. This is $7 million higher than an earlier estimate (ENR Jan. 9, p. 33).

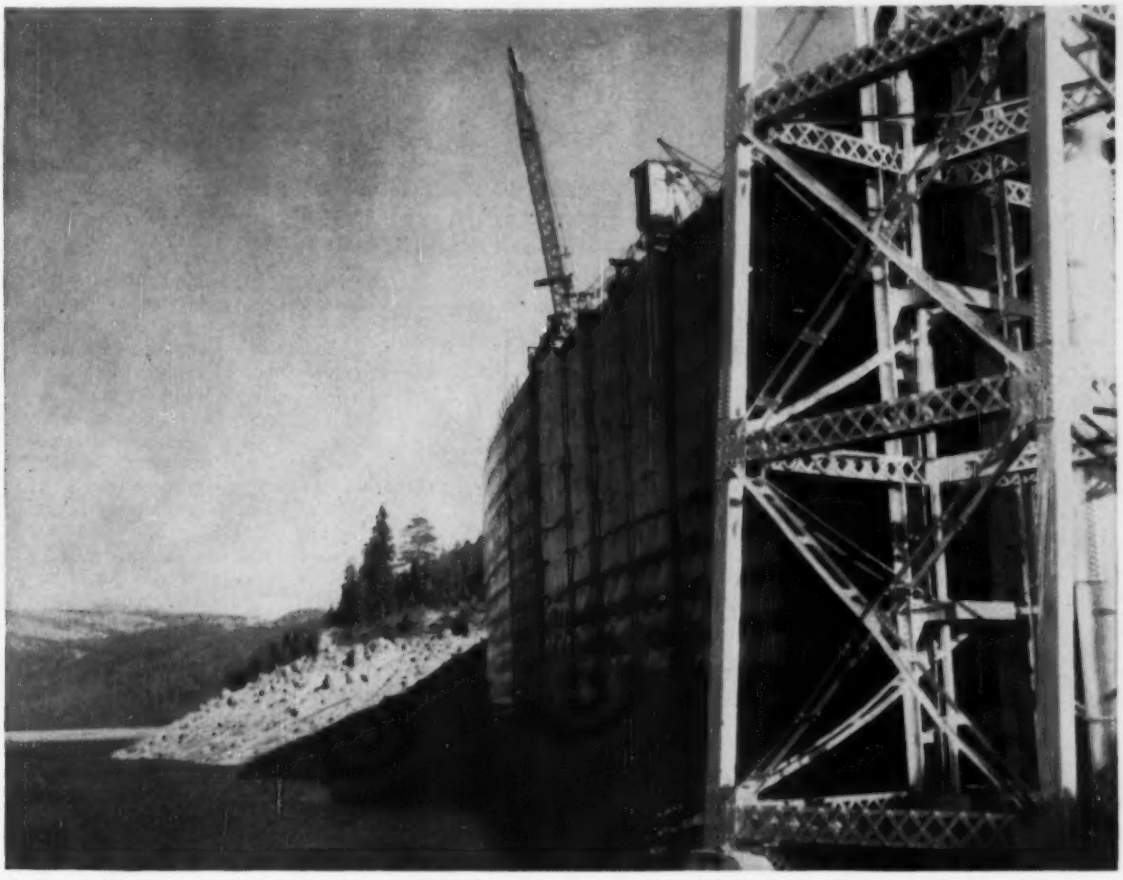
J. W. Vickrey, assistant state highway engineer, told the State Highway Commission an application has been made for at least $10 million in federal aid to help restore the roads.

F. W. Panhorst, state bridge engineer, reported new bridges to replace those swept away by storm water will have to be higher and wider and therefore will cost more money.

FPC Approval Asked for $6-Million Hydro Project

The Central Alaska Power Association of Anchorage, composed of three REA cooperatives, has applied to the Federal Power Commission for a license to construct the $6-million Cooper Lake hydroelectric project. A 1956 construction start is hoped for.

The project would provide 14,000 kw. Transmission lines costing an additional $4 million would carry power to the Kenai Peninsula and the Anchorage-Matanuska area, presently served by the 30,000-kw Eklutna hydroelectric plant and by steam plants.



Quilted look on dam face results from refacing with thin steel membrane bolted to the dam and backfilled with new concrete. Reservoir is part of Southern California Edison's Big Creek project in the Sierra Nevada.

Steel Faces for Old Concrete Dams

Thin steel watertight membranes have been placed on two high mountain dams to protect the concrete from weathering due to frost and ice action. The 10-gage facings have been applied to two of the concrete gravity dams that form Southern California Edison's Huntington Lake in California's Sierra Nevada.

The membranes are expected to be bottletight. But, just in case they aren't, underdrain systems have been placed behind the blankets of new concrete that fill the space between the membranes and the existing concrete.

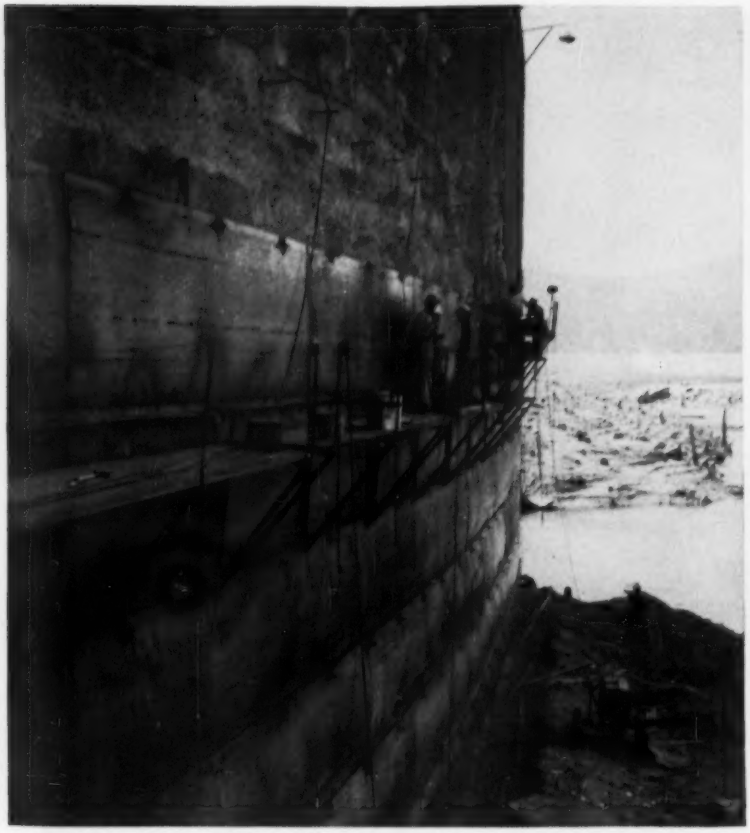
The dams were completed in 1913 to El. 6915 and were raised in 1917 to El. 6953.5 (maximum water surface is El. 6950). The early construction was the first work on Southern California Edison's Big Creek project on the headwaters of the San Joaquin River. Since that time several other dams have formed additional reservoirs that together with tunnels and powerhouses give Southern California Edison's Big Creek project a capacity of 532,000 kw.

• **Freeze-thaw cycles frequent**—Concrete work on the original construction represented the highest quality obtainable with the construction equipment of that time. But freezing and thawing conditions at Huntington Lake are severe, with a large number of cycles occurring each winter when the reservoir level is normally low and the faces of the dams are exposed. The situation is aggravated by the almost daily melting of snow on the crest of the dams; water flows down and freezes on the face of the dams at night.

In addition, water in the reservoir is mildly acid from the dissolved carbon dioxide in the melted snow and rainwater inflow. The acid water is active in dissolving lime compounds in the cement. The combination of acid leeching and frost action has caused softening of concrete to depths up to 2 ft.

Several means of protecting the concrete have been proposed and tried. A gunite coating applied to the worst portions in 1939 proved unsatisfactory due to the nature and extent of the disintegration. The best protection has been an earth blanket. But this method cannot be used on Dams 1 and 2 at Huntington Lake because of tunnel and penstock intakes located near the bases. Dam 1 is 170 ft high and Dam 2 is 103 ft high.

• **Repair job completed**—Some years ago at Florence Lake Dam (see box) a thin steel membrane was applied to the face of one barrel of a multiple arch structure. On the basis of this work Southern California Edison engineers decided to use a similar system of steel facing on the Huntington



SHEETS OF 10-GA. STEEL are hung from bolts grouted deep into the dam face. The 6x20-ft sheets are welded just above the bolt line. Scaffolds hang from bolts.

Lake dams. The work was undertaken during last summer and fall when reservoir levels could be drawn to an extremely low stage. The $650,000 repair job was accomplished by Macco Corp. and completed in November in time for winter storage.

First step was placing anchor bolts in the dam face. Holes were drilled some 6 to 8 ft into the concrete on about 6-ft centers. Grouted into the holes were 1-in.-dia rock bolts with an expansion anchor on the buried end and threads on the exposed end. The bolt placing crews worked from the top down as the reservoir was being drained. As they proceeded down they knocked off any loose, particularly badly disintegrated, old concrete. Main purpose was to prevent loose pieces coming down during later construction operations and injuring workmen.

The 10-gage steel was delivered to the job in 6x20-ft sheets. Two such sheets were welded together to permit handling of a single 6x40-ft sheet during installation. The double sheets were lowered from the top of the dam by crane. They had bolt holes previously burned in to fit over the bolts.

Nuts and washers had been adjusted over the bolts to hold the sheets at least 6 in. out from the face of the existing concrete—although the void in some cases was as much as 2½ ft thick due to removal of poor concrete. All seams were lap-welded with one bead of electric welding. Circular front washers were welded to the steel sheets to make the bolt detail watertight. Finally, the nuts were welded to the washers.

After a horizontal row of steel had been positioned and welded, a new concrete backing was placed. Concrete was made with ¾-in. maximum aggregate and had 2,000-psi 28-day strength with a 3-in. maximum slump. The mix was air entrained having 4% to 5% air in the fresh unvibrated concrete.

Sealing the new face at both top and bottom is an 8-in. channel that is grouted to the dam.

• **Steel face coated**—After the sandblasted steel was placed and concreted, it was coated with a cold-applied, coal-tar enamel material. This was covered by an aluminum paint coat to reduce heat absorption.

Underlying the new face is a drainage system to keep water out of the existing concrete. A fiber-type pipe, 4 in. dia, was split in half and placed in vertical courses on 20-ft centers against the existing concrete. At the lower margins of the steel face are 8-in. half-round collector drains. These drains are brought to a central point and water is released through a 6-in. dia hole drilled through the dam. A man well was constructed into the existing concrete to provide access to the bottom of the drainage system.

• **"Quilted" dam results**—Result of pouring concrete behind the thin steel sheets gives the dam face a quilted look. It is not expected that the steel will remain in intimate contact with the new concrete except when subjected to water load. But the combination of steel membrane, new concrete backing and underdrain system is expected to protect the existing concrete from further severe frost damage.

W. L. Chadwick is vice-president in charge of engineering and construction for Southern California Edison Co. R. W. Spencer is manager of engineering. The work was designed under the direction of T. M. Leps, chief civil engineer. Serving as consultants on design were Bechtel Corp. and Julian Hinds. Construction was supervised for SoCal Edison by O. N. Kulberg, chief construction engineer who was represented in the field by H. A. Barber, project engineer.

General superintendent on the project for Macco Corp. was Fred D. Hudkins.

Other Solutions To This Problem

Protection from frost action of concrete dams located at high elevations has been a problem elsewhere. Southern California Edison Co.'s Florence Lake Dam was covered with an asbestos-felt blanket (ENR, May 15, 1947, p. 80). One of the arches of this multiple arch structure at El. 7300 was coated with a membrane of 12-gage steel placed against the original dam concrete.

The Gem Lake Dam owned by California Electric Power Co. and located at El. 9050 in California's Sierra Nevada was gunite coated (ENR, Oct. 30, 1947, p. 76). An entirely different system was used on Barker Dam owned by Public Service Co. of Colorado. This gravity dam at El. 8200 near Boulder, Colo., was refaced with precast concrete slabs backed by Prepakt concrete (ENR, Nov. 13, 1947, p. 116).

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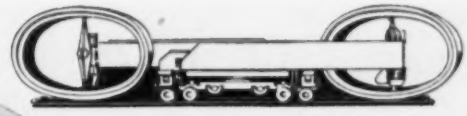
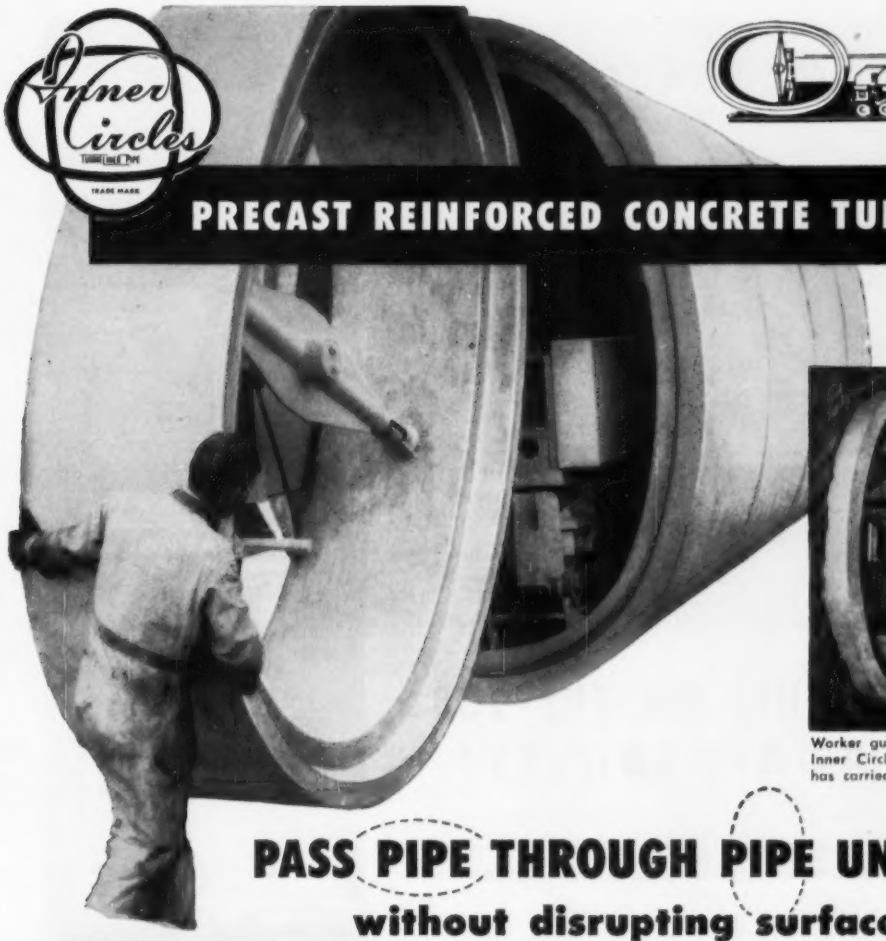
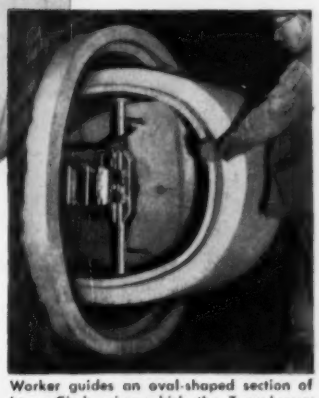
PRECAST REINFORCED CONCRETE TUNNEL PIPE



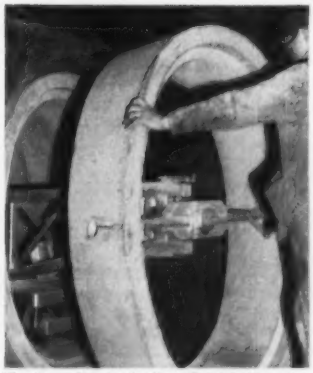




Worker guides an oval-shaped section of Inner Circle pipe which the Tunnelugger has carried through conduit already laid.

PASS PIPE THROUGH PIPE UNDERGROUND

without disrupting surface traffic!



The Tunnelugger backs off with the pipe still on the arms to set it firmly in place, assuring an even, tight joint.

Inner Circles methods using elliptical Tunneliner pipe now make it possible to pass full structural ring, precast, concrete pipe through conduit already laid—even on curves. Surface excavation is eliminated...traffic is undisturbed...work progresses regardless of weather conditions. Less equipment and fewer laborers are required, yet sewers are completed faster at less cost, with pipe strengths *pretested* by commercial laboratory procedures.

The new two-way Tunnelugger can operate in either direction from a centrally located shaft—quickly delivering and positioning Inner Circles at either end while digging continues at the other.

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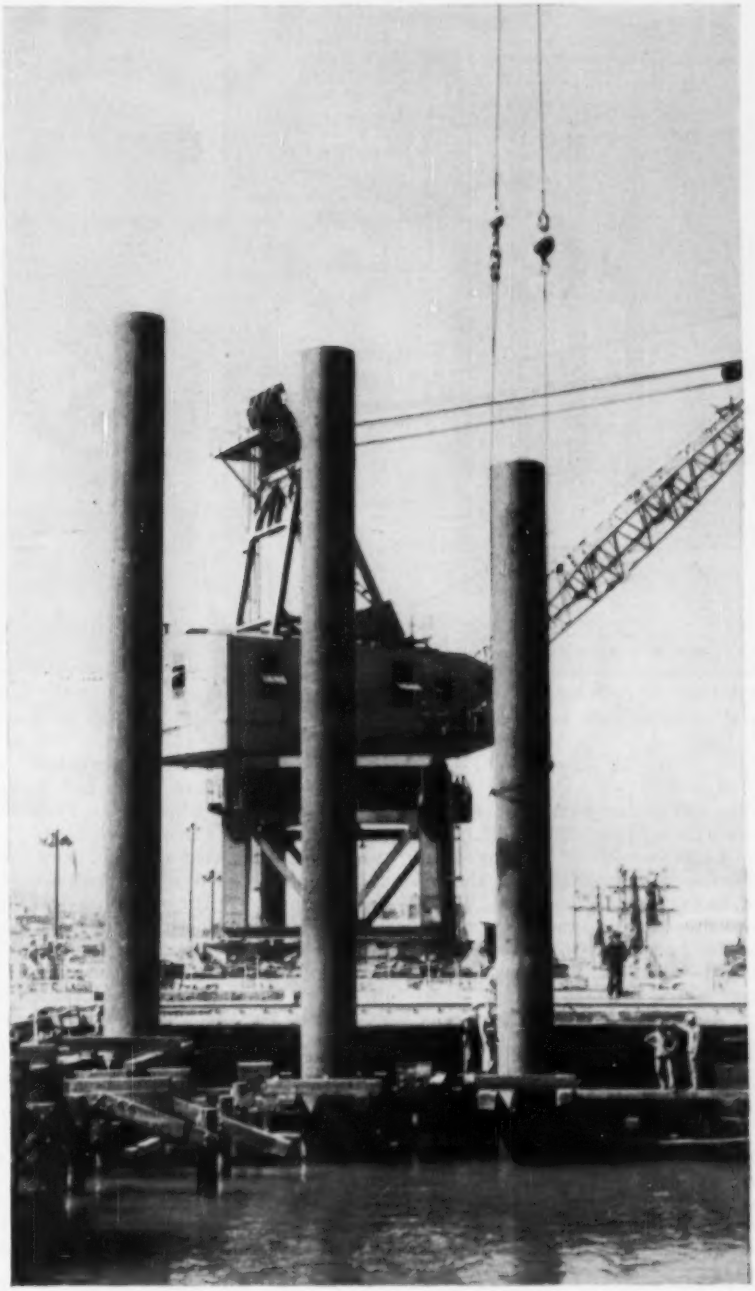
Deep Caissons Support Navy Wharf

A new wharf at the San Francisco Naval Shipyard is supported by caissons that are 4 ft in diameter and are as much as 150 ft long. Even though dollar value of the work is relatively small (original contract price was $247,526), considerable interest is focused on the job. The design is noteworthy. And the caisson work was more difficult than expected.

Supporting the 147x55-ft wharf are 16 of the 4-ft dia steel-shell, concrete-filled caissons. The units were sunk through miscellaneous fill, bay mud and firmer strata to serpentine rock. Design called for a 10-ft bell in the rock.

Construction troubles were largely centered on inability to maintain seals in some of the caissons against pressure of soil and water. Such difficulties delayed completion of the work more than a year. And the belled base detail had to be modified on three of the units.

The construction replaces a World War II timber structure that has exhibited considerable distress. The program is officially termed "Submarine Quay Wall Repairs." Submarine means that it is the portion of the shipyard devoted to repairing submarines. And it is called a quay wall because the wharf and underlying filled material is intended to stabilize to some degree an extensive part of the waterfront. In actuality, the new work is a small part of a long wharf from which three piers and a drydock wall extend. The work is financed by "replacement funds." As such, the most critical area had to be tackled when the contract was let in 1954. The Navy expects to replace the remainder of the wharf with current planning calling for bid opening this month.



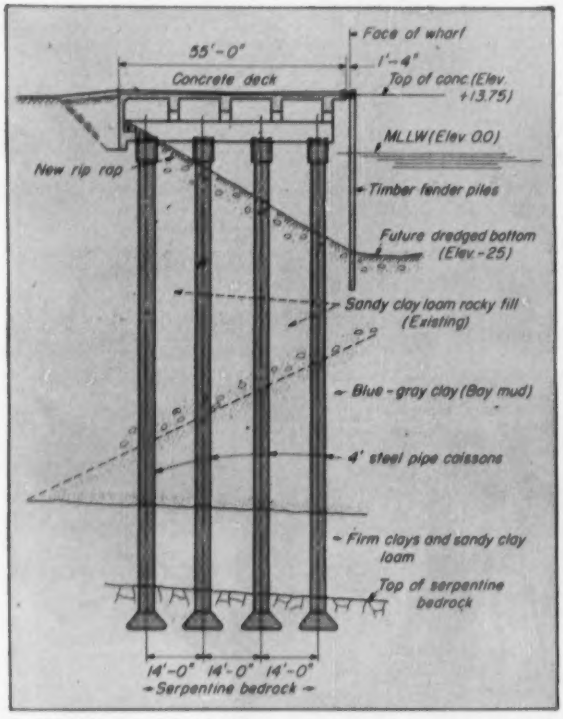
STEEL SHELLS, 4 ft in diameter, have been sunk to depths reaching 150 ft below water surface to support a wharf at San Francisco Naval Shipyard. Shipyard crane in background was not used on construction.

• **Design considerations**—Deep caissons bearing on rock were adopted for support of the wharf only after careful design analysis. In the opinion of the designers, any lesser foundation system—such as piles, for example— would probably be inadequate. For a complete understanding of this thinking it is necessary to get a clear picture of the history of the old wharf and the underlying soil conditions.

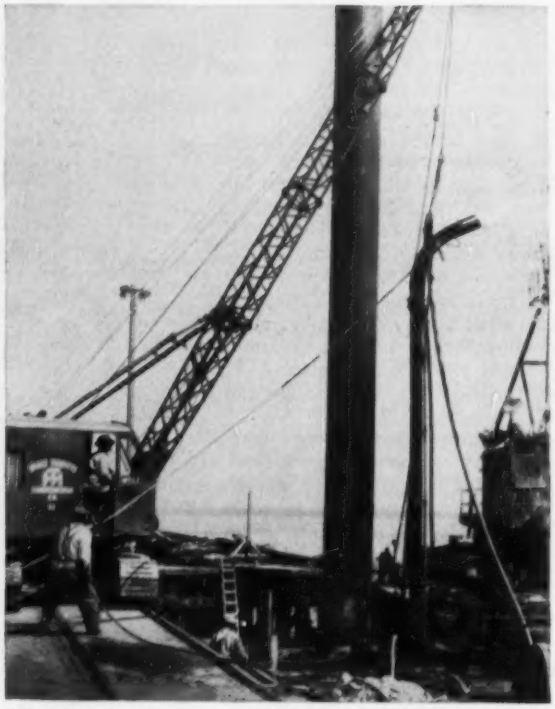
Knowledge of subsurface conditions came from churn drill borings. Some were made during World War II, but only a few went to rock. More were made in 1953, and all but one of these went to rock. From these borings it was concluded that subsurface conditions were approximately as shown on the accompanying drawing.

First step in construction of the World War II wharf was an attempt at stabilizing the shoreline. This involved excavating a trench in the bay mud and backfilling with better material. This backfill slopes from El 14 (M.L.L.W. is El 0) at the inshore side of the wharf to El −25 at the wharf face. The fill extends to El −75 trapping a wedged-shaped segment of bay mud on either side.

(*Continued on page 38*)



CAISSONS TO ROCK—After removing interior material, holes for 13 of the 16 units were belled to 10-ft diameter.



AIR LIFT PUMP removed material from inside one caisson as two others are positioned for driving.

Width of the fill varies from 130 to 200 ft.

The old timber wharf was built by driving timber piles into the fill. Since the wharf was built, it has been subjected to consolidation of the fill and the underlying bay mud. There have also been outward movements due to lateral pressure of the entrapped material. This has bowed some of the diagonal bracing members. And in some cases reactions from brace piling broke the deck framing. In addition settlement has dragged some of the supporting piles completely away from the wharf deck.

The designers ruled out a repeat of the same kind of construction for obvious reasons. They also decided against using long steel piles that would penetrate through the fill and the bay mud into the firmer material that lies at about El —75. To support the load would have required a considerable number of piles. This would present a large area of resistance to consolidating and creeping subsoil. The smaller area presented by the round caissons with large bent spacing would not be as subject to lateral loading.

Another reason for preferring caissons to driven piles is that in using caissons the base material or rock can be visually observed.

The 55x147-ft wharf is supported on 16 caissons each of which is 4 ft dia. The caissons are spaced on 14-ft centers in each of 4 bents, with bents spaced on 42-ft centers. This same spacing arrangement is planned for the remaining 959 ft of wharf length.

Caissons were sunk as hollow steel shells. The lower 70 ft of the caissons are $\frac{3}{4}$ in. thick and the remainder $\frac{1}{2}$ in. thick. The intent of the design was to sink the shells to rock or firm material. The base would be excavated to form a bell with at least 10 ft dia. bearing and with sides of the bell sloping at not greater than 30 deg.

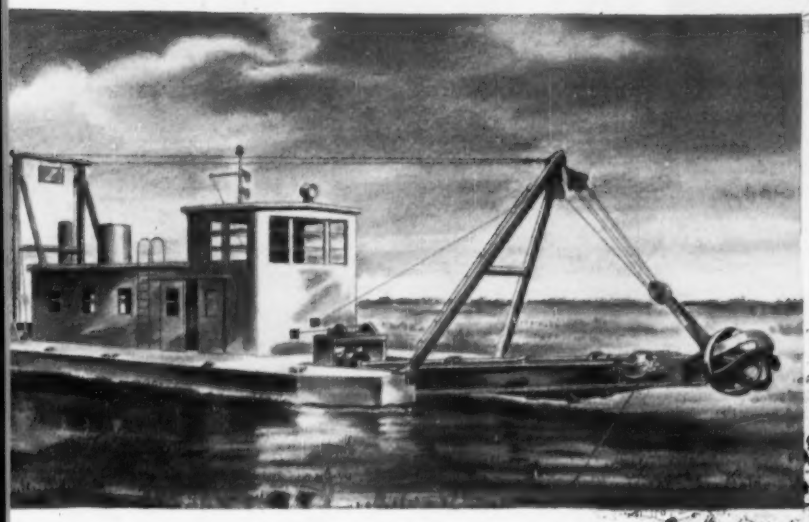
The base rock is a serpentine formation. When exposed it may weather rapidly. And, even when confined, it is sometimes fractured and has apparent slip planes. However, for service such as subjected to at the San Francisco Naval Shipyard it is considered quite good foundation (as witness the south tower of the Golden Gate Bridge that is founded on serpentine). For this wharf, the serpentine was judged to be good for a 10-ton per sq ft load.

Load on each caisson varies, but averages about 1000 tons. This is made up of several factors. The basic loading is deadload plus 600 psf uniform live load or wheel load of truck crane operation. To this was added a seismic force equivalent to a lateral load of 10% of gravity (gravity in this instance was the weight of the superstructure, a 45 deg. soil wedge behind the cutoff wall, and a superimposed live load of 150 psf). A one-third stress increase was permitted for a normal plus seismic load.

In addition, two future possible soil loadings were considered. One of these is downward drag or friction caused by additional settlement of the soil. The other is possible future outward drag as considered caused by movement of the soil mass out from the shore. This latter results in moment at the base and top of the caissons and also direct tensile stress (other caisson loads are compressive). For these future possible soil loadings a stress increase of 50% is used.

• **Construction problems**—A contract for the work was awarded to Healy-Tibbitts Construction Co. of San Francisco on May 19, 1954. The contract called for Nov. 20, 1954, completion. As of this writing the work is still in progress although completion is imminent. The primary reason for the delay of a year in completion of the work is difficulty that the contractor encountered in getting some of the steel shells to form a seal so

A Dragon moving through a swamp



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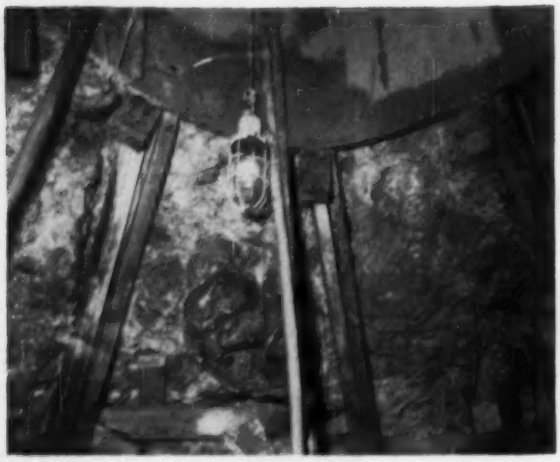
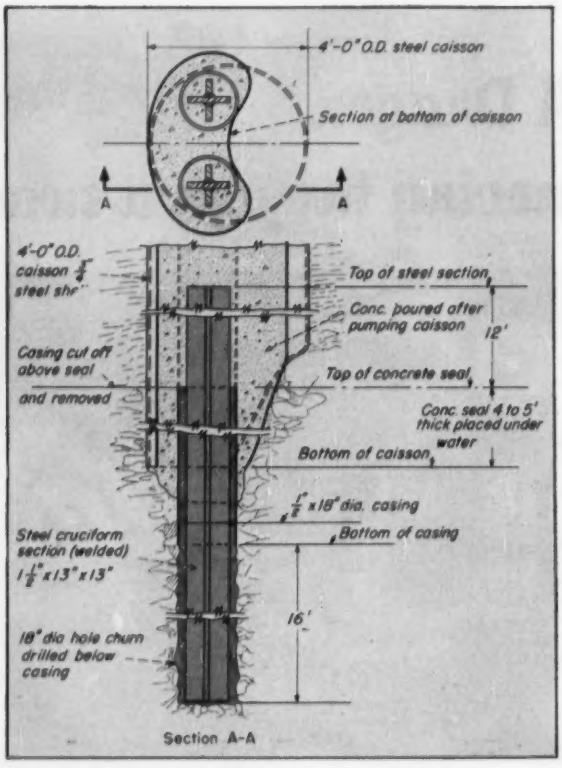
Ellicott "Dragon" Model Canal Dredges—6 to 12 in. sizes, built for irrigation and drainage canal maintenance, will work in 13 ft. width, assembled in ½ day.



BELL EXCAVATIONS required considerable support on several of the caissons. Steel shores and timber lagging were needed to hold the holes.


4'-0" O.D. steel caisson
Section at bottom of caisson
A
A
4'-0" O.D. caisson 5/8" steel shell
Top of steel section
Conc. poured after pumping caisson
12'
Casing cut off above seal and removed
Top of concrete seal
Conc. seal 4 to 5' thick placed under water
Bottom of caisson
5/8" x 18" dia. casing
Bottom of casing
Steel cruciform section (welded) 1 1/2" x 13" x 13"
16'
18" dia hole churn drilled below casing
Section A-A

HOLES DRILLED INTO ROCK are used for support of three caissons where a seal was not obtained. Steel and concrete filled holes develop bearing through friction and bond.

that the material inside could be excavated.

The specifications left to the discretion of the contractor the method of sinking the caissons. They could have been driven, excavated, drilled, jetted or placed in any way that the contractor could devise. Healy-Tibbitts elected to drive the shells. A 30,000 ft-lb hammer was mounted in a cage on a special driving head. The head was made up of double layers of 12-in. timbers laced around 12-in. H-beams. A steel angle was mounted at the base bent to the circumference of the caissons. On top of the double layer of timbers and beams was a 2-in. thicks steel plate. The cage that included the hammer was superimposed on this.

The caissons were positioned and held in place by walers fastened to some of the old wharf structure. Then the hammer and driving head assembly was supported by a derrick barge.

Each caisson was driven until driving became difficult. Then the material inside was removed by an air lift pump made up of 20-ft flanged sections of 10-in. pipe. Running down the outside of the pipe is a 2-in. air hose that feeds air jets to the inside of the 10-in. pipe through a manifold located near the tip. Air is furnished at 100 psi by a 1,000 cfm compressor. Reduction in relative weight of the water column inside the air lift results in a suction action that effectively removes the earth and mud material. It will even handle fairly large size rock.

By following these methods three of the 16 caissons were successfully excavated to bedrock in about three days each. But difficulties were encountered on the remaining 13. These troubles took two general forms. One was difficult driving conditions due to the impingement of the steel shell upon subterranean obstacles such as boulders or piles that had not been removed. In some instances these obstacles caused the shell to buckle. And in three cases the steel was ruptured. When it was possible to get at the tip of the shell the fractured steel was removed piece by piece. Then, if rock had been reached, the material was belled out. But, if a bell could not be made, driving continued. It should be pointed out, however, that all driving was done without providing a shoe or stiffening the caisson tip.

The other major difficulty was blow-back into the shell of sandy material where a seal had not been formed in firm strata. It is not clear just where the sandy material came from. And this will probably be the subject of litigation in connection with settlement of this contract. Between the bay mud and the serpentine rock is material labelled as firm clay and sandy clay loam. One school of thought has it that this material included substantial quantities of sand. Another theory is that vibrations set up by driving, jetting and air lifting together with the suction caused by the air lift resulted in a physical separation of sand from the silts and clays. In either event, a seal was difficult to form.

On 10 of the 13 caissons that resulted in blow-back troubles, the contractor eventually was able to develop a seal. This was done by repeated driving, material removal by air lift, jetting, spudding and whatever means were available. Even when a seal was formed, excavating some of the bells was difficult. Steel beams, timbers, lagging, excelsior, and other materials were needed to hold the walls of some bells.

On the remaining three shells, many means were attempted to develop a seal. The contractor used the Halliburton oil well method at considerable expense but with very poor results. And Healy-Tibbitts was considering a freezing method that would permit further excavation.

At this point, however, an acceptable substitute base detail was developed. The substitute (above) centered

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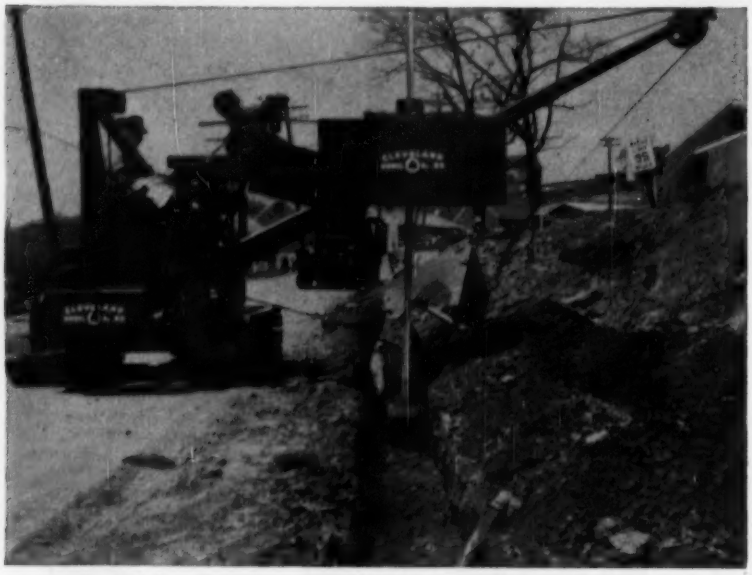

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around a concrete encased steel column drilled into the rock through a small diameter steel pipe. This column would develop bearing by friction, bond and/or keying with the base rock and with the concrete inside the caisson. A 24-in. hole was desired. But the three caissons in question were bent out of shape so that it was impossible to sink 24-in. holes. Instead two 18-in. holes were substituted.

The procedure for this alternate base support method was to drill a pair of 18-in. holes through the loose material into the rock. These holes were cased in the zone of the poor material and it was possible to form a seal in the rock and excavate. The holes had to be drilled at least 16 ft below the casing into the base rock to develop the necessary friction. Then a steel cross was introduced. This cross was made of 1½ in. plates and measured 13 in. in both directions. Next, grout pipes were placed and these were followed with aggregate. Then the hole was grouted.

As much of the steel shell for these smaller holes as possible was removed. But at least 12 ft of the steel cross had to project into the caisson.

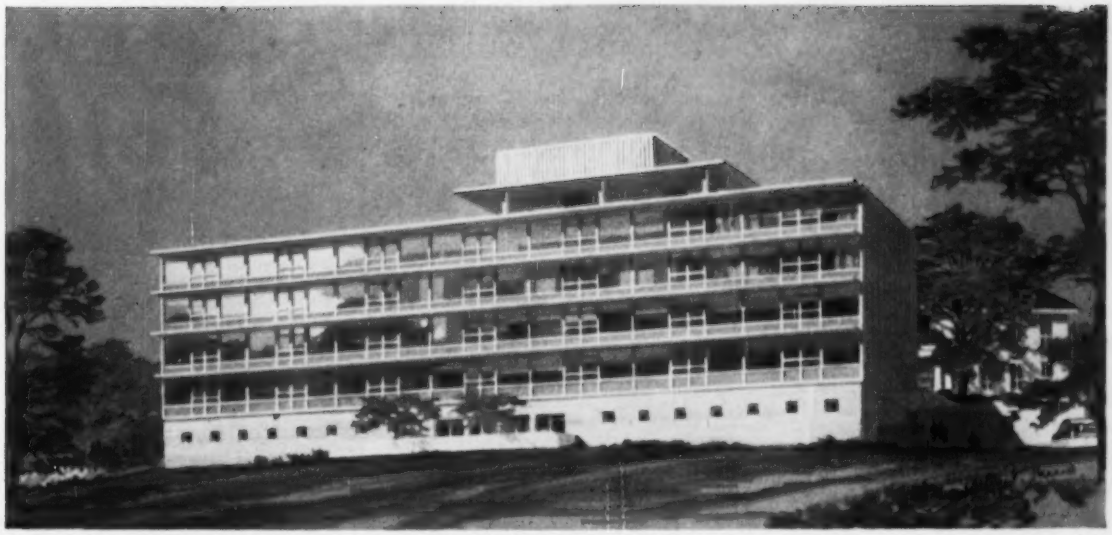
Final step in the caisson construction was filling the units with concrete. This was done by use of a bucket measuring 14 ft long and 3 ft dia that carried 3 cu yd of mix. Using 2½ in. maximum size aggregate that achieved 3,500 psi 28-day strength, some 70 cu yd of concrete filled each shell.

The four caissons comprising a bent are joined by use of a 7-ft wide by 5 ft deep bent cap. Steel angles welded to the caisson shells anchor them to the pile cap. Spanning between bents are precast beams that are 2½ ft wide and 4 ft 2 in. deep being launched at each end to 6 ft 8 in. depth. The girders are locked in place by a concrete key cast between adjacent units. And the girders support a 14-in. thick deck slab.

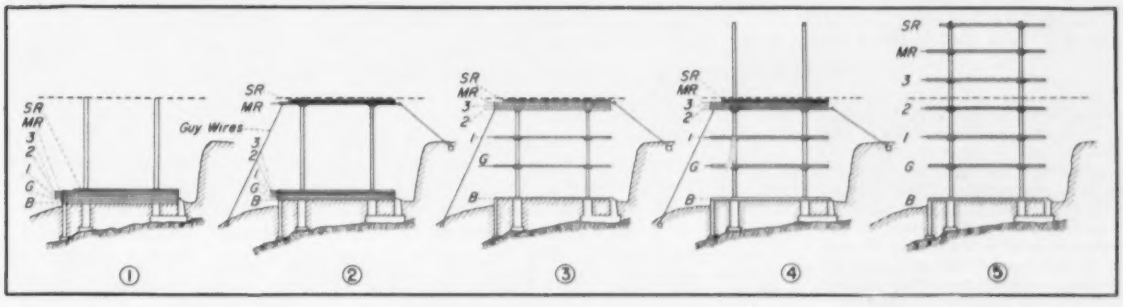
The San Francisco Naval Shipyard submarine quay wall repair work is a project of the Bureau of Yards & Docks of the Navy. Capt. G. K. Brodie, public works officer for the 12th Naval District, represents the Navy as design and construction officer. Cdr. J. T. Riordan, public works officer of the shipyard, is resident officer in charge of construction.

Design of the project was accomplished by John A. Blume and Associates, consulting engineers of San Francisco with Joseph P. Nicoletti project engineer.

J. C. Marthens is president of Healy-Tibbitts Construction Co. with L. W. Hunt, chief engineer, representing the firm on the work.



LIFT-SLAB ANNEX to Litchfield County Hospital in Winsted, Conn., will be a six-story, 62-ft-high structure. A lift-slab building recently built in Calgary, Alberta, tops this one by only 2 ft (ENR April 28, 1955, p. 24).



Lift-Slab Job Goes Up Six Stories

In flood-racked Winsted, Conn., one of the tallest lift-slab structures on record will soon be rising from its foundations. In spite of delays, foundations for the six-story, 62-ft high addition to the Litchfield County Hospital already have been cast in place. Erection of the steel columns is scheduled for February.

Cost of the facility is estimated at $1.1 million, which includes a three-level corridor to connect it to the existing hospital.

Commencing about the end of February, the construction procedure will revolve around the lifting into place of the six 8½-in.-thick prestressed concrete slabs. Five of the slabs are 43 x 182 ft, and one is 41 x 80 ft. The small slab will top out the building as the solarium roof. The slabs are guided into position and supported by 14 wide-flange steel columns spaced 26 ft c-c.

• **Two-stage lift**—It will be a one-console lift-slab operation, executed in two stages. The first tier of columns to be erected will be only 35-ft high. Midway in the erection procedure a 25-ft extension will be spliced onto them.

Lifting begins with jacking the upper three slabs (solarium, roof and third floor) to the top of the 35-ft columns. Following this, the second, first and ground-floor slabs will be raised to their final permanent positions. Then, the 25-ft extension will be spliced onto the columns, after which the top three slabs are to be moved to their final places.

Placing the reinforcing and casting the slabs is designed to proceed rapidly at basement level. First, heavy wire mesh will be supported on bolsters. The mesh is to act as a grid system for positioning wiring conduit, sleeves and prestressing cables, or tendons. Each of these tendons is to consist of ten 0.196-in. dia, high-tensile-strength wires (ultimate strength 230,000 psi), housed in a 1-in. dia flexible sheathing. After they have been placed, mild steel reinforcing will be inserted at critical points around openings in the slabs and at the tops of slabs at columns. A separating compound next will be sprayed on the completed slab to permit casting the new slab on top.

Tensioning of cables is to start when the slabs have reached a strength of 3,600 psi—in about 14 days. This strength will be verified by laboratory tests, and by field tests with a rebound hammer. The wires will be tensioned by hydraulic jacks acting against the edges of the slab, the bottom slabs being prestressed first, and at the same time that the upper slabs will be undergoing preparation for concreting.

During the lifting operation, the building is to be stabilized by guy wires attached at the slab corners and anchored to four concrete deadmen.

The slabs were designed as two-way flat slabs, the columns being spaced across the building so as to

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balance positive and negative moments. Concrete to be used for the slabs is to have an ultimate compressive strength of 4,500 psi. An admixture will be used to cut water requirements, reduce shrinkage and make the concrete more workable.

• **Novel lifting collars**—One of the unusual features of this job is the method that will be used to connect the lift-collar castings to the columns. These collars will be placed over each column and the slabs cast, embedding the collars. Next, the lifting rods will be connected to the collars, and the slabs raised into place. At this stage, the usual procedure is to hold the slabs with the jacks until steel-plate shear blocks are welded to each column. On this project, however, after the slabs are lifted into place, 1¾-in. dia pins will be shoved through the column flanges and steel shear block welded on the flange undersides, thus carrying the dead load of the slabs.

Finally, a rigid connection between the collars and columns will be made by driving steel wedges between the tops of the collars and the columns. The upper side of the pinned shear plates will be welded to the underside of the collars.

Advantages claimed for this pin method of fastening the collars include a considerable reduction in amount of welding and lifting time. It is estimated that a lifting time of only 10 days will be needed as against the three weeks that were required by the old method.

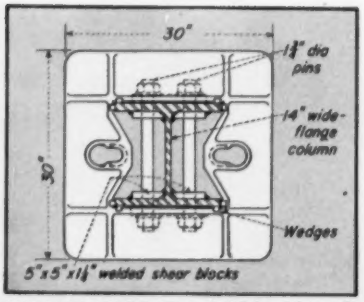
Because of the sharply-sloping terrain, the design calls for a 26-ft-high retaining wall on one long side of the building. This wall will be built after the slabs are in place. Earth loading against the wall will be carried by footings to bedrock.

The exterior of the building will consist of side walls of glass and light metal panels, and masonry end walls. The masonry end walls will be 12 in. thick above the ground floor and 16 in. thick below. These walls are designed to take transverse wind loading on the structure.

Partitions will consist of 4-in. gypsum block, plastered both sides. Partition loading is 27 psf.

The slabs were designed for a live load ranging from 40 to 180 psf, the lightest load being for the wards and the heaviest for radiography areas, where floors, walls and ceilings will be lead-lined. Also, the movable equipment in this area will be extremely heavy.

• **Lift-slab is cheaper**—In designing this building, the engineers felt that the lift-slab method would be more economical than other alternatives. The general contractor, who had the option to use lift-slab or cast-in-place construction, decided in favor of lifting.



LIFTING-COLLAR is held by 1¾-in. dia pins that pass through column flanges and 1¼-in. shear blocks which later are welded to flanges.

Lifting cost is estimated at 37 c per sq ft. The prestressing operation, including placing and jacking, plus all slab mild steel and mesh in place, will cost about 70 c per sq ft. If conventional reinforced concrete design were used, the mild steel alone, it is estimated, would run about $1 per sq ft. Also, if conventional concrete design were used, the slabs would have been 2 in. thicker per floor. The engineers, in addition, claim that a vertical height of 10 ft was saved by the prestressed design over a structural steel design. There is a height of 12 ft from the basement slab-on-grade to the ground floor slab. Other floor-to-floor heights are only 10 ft.

Other advantages stated by the designers:

• Tendons are less than 10% of the weight of a comparable mild-steel design and are easier to place and tie on the job.

• Formwork for the slabs is practically eliminated; only edge forms are necessary and they can be reused on each of the six slabs.

• Less finishing is required for the concrete, since each slab is cast on top of an already troweled surface.

• Since all concreting is done on the ground with each slab cast over the other, it is easier to concrete in winter months because of the simple arrangement in setting up salamanders and enclosures.

Sherwood, Mills and Smith of Stamford, Conn., were the architects. Marchant and Minges of West Hartford, Conn. were the structural and mechanical engineers. The general contractor is A. F. Peaslee, Inc., of Hartford, Conn. The prestressing will be done by the general contractor with the Freyssinet Co., of New York City, as prestressing consultant. New England Lift Slab Corp., Boston, is the lift-slab subcontractor.

This Bucyrus-Erie walking dragline is handling excavation of blasted rock and river bottom overburden below the tailrace area of Chief Joseph Dam in Washington State.

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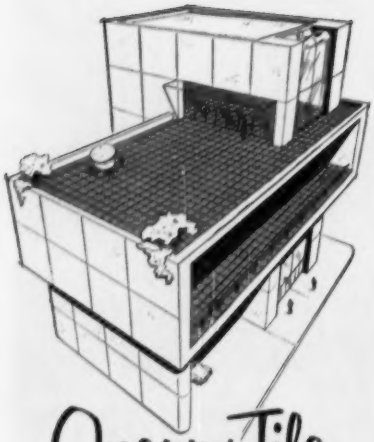

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Big Slide Blocks the Autopista

Venezuela's 10 mile, $60 million mountain auto road celebrated its first birthday in December by having one of its many deep cuts blocked by a mammoth size slide—30,000 cu yd covering a 1,000 ft length many feet deep. Sustained, torrential rains were the cause, lubricating the exposed cut face beyond its endurance. Venezuelan contractors benched out a 2,000-ft bypass road in 24 hr, but this too succumbed to the rain, and another had to be built. It is still being used by motorists between Caracas and its seaport and airport (in the background beyond the cut) while the slide material is being removed.

Long Hotel Goes Up in Short Time

Rushed to completion in 205 days, the luxurious 312-room El Embajador Hotel, Ciudad Trujillo, Dominican Republic, has opened. The reinforced concrete building has seven stories plus penthouse and overlooks the Caribbean Sea.

The 458x78-ft hotel is finished in white stucco and includes an outdoor swimming pool, bandshell, tennis court, casino, night club, cocktail lounge, bar, and ground-floor shops. Each room has its own balcony.

Roy F. France & Sons of Miami Beach, Fla. were architects for the 117-ft-high resort. Design and construction were by Merritt-Chapman & Scott Corp., New York, N. Y.

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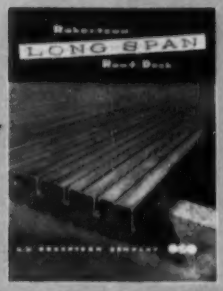

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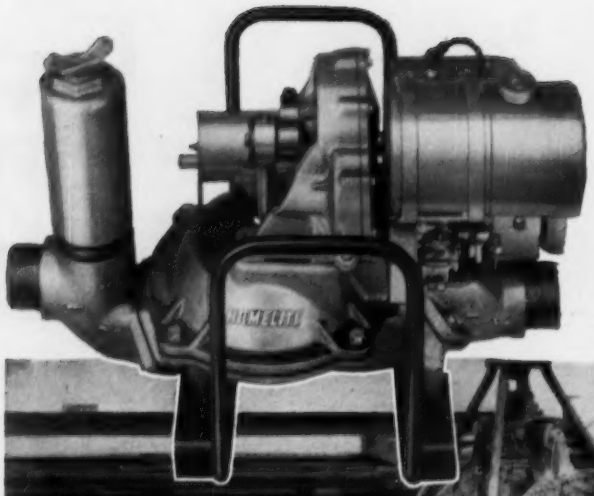

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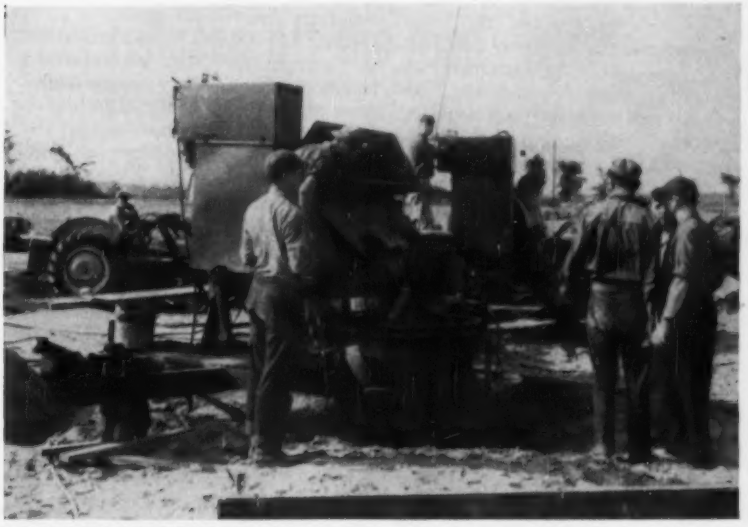

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Emulsion Stabilizes Foamed Concrete

A foam concrete technique imported from Germany has been polished up for applications in this country. Using standard concrete ingredients plus small amounts of foaming agent and plastics elastomer, the process produces a stable, non segregating light weight concrete that is impermeable to moisture and has relatively good insulation qualities.

The stability and moisture resistance of the concrete, which are considered the most important attributes of the foam by the Elastizell Corp., U. S. licensee for the product, stem from the use of a water dispersion plastics emulsion along with the foaming agent. The plastics compound evidently stabilizes the bubble structure of the foam, in effect giving the individual cell walls greater strength and resiliency. After curing, the plastics emulsion becomes water resistant, and the material is non-permeable, and has a moisture absorbency factor of about 2%.

Preliminary results of testing programs sponsored by Elastizell at Rensselaer Polytechnic, Battelle and the University of Michigan, indicate that the expanded concrete will be particularly effective in applications such as self insulating floor slabs, roof fills, steam pipe insulation courses, and pre cast wall panels. The inherent moisture resistance of the material, according to Elastizell, makes it possible to eliminate the vapor barrier on residential slab constructions, and considerably simplifies roof coating requirements.

The density of the concrete is controlled both by the amount of additive and the length of mixing cycle. The foam is created mechanically in a high speed mixer, since the foaming agent is inert and is not of the chemically reacting, gas liberating type. For structural applications, the density range recommended at present is from 40 pcf up, providing compressive strengths from 300 to 3,000 psi. Lower densities in the 30 pcf range are

FRACTURED foam concrete block shows homogenous cell structure.

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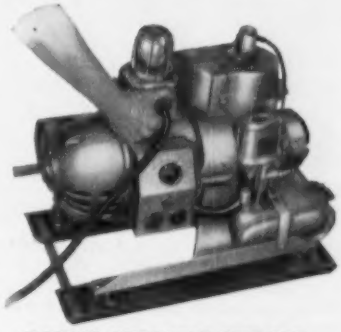

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possible where insulation value rather than structural strength is the determining factor. Currently, the company is using a mix density of 70 to 80 pcf for floor fills, which compares to 150 pcf for standard concrete. At this density, according to a Rensselaer Polytechnic Institute report, the thermal conductivity (K value) of the concrete is between 2.4 and 2.8 compared to a K value of 12.1 for full density plain mortar.

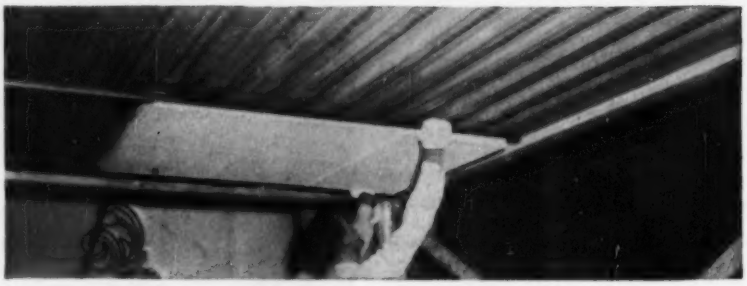
Higher insulation properties of the foamed concrete allow extension of concrete slabs through the outer wall of slab-built houses without an insulation barrier, permitting the slab and perimeter of the building to be a monolithic structure so that walls are mounted directly on the slab rather than on the perimeter footings. On a series of houses built with this construction in Alpena, Mich., snow which drifted against the exposed edge of the slab remained unmelted during full winter heating.

Cured foamed concrete has a warm, dry feel. The manufacturer claims that finished flooring, tile, rubber tile, linoleum and even wall to wall carpeting can be laid directly on the slab, since the material will not transmit moisture from the sub grade.

The cost of the foamed concrete is "competitive" the manufacturer claims, so that ancillary savings gained from reduced structural and insulation requirements provide economies. The actual amount of additive is quite low. A typical single charge for a mixer to produce 70 pcf concrete is 5 bags cement, 1,160 lb sand, 235 lb water, 2¼ pints foaming agent and a little over a gallon of emulsion. Foamed concrete can be handled with buckets, or pumped to final location. Both diaphragm piston and Moyno pumps have been used without segregation or moisture bleed.

Although Elasticrete is presently available in Michigan, the marketing plans of the company are to sell the product through dealers and licensed contractors who will place the concrete with technical assistance from and under supervision of the corporation's engineers. ELASTIZELL CORPORATION OF AMERICA, ALPENA, MICH., AND 15555 W. MCNICHOLLS ROAD, DETROIT 35, MICHIGAN.

T-Tracks a Yard Apart . . .



. . . Support Modular Acoustic Panels

Faster installation of acoustical ceilings without losing the appearance of square acoustic tiles has been effected by producing perforated metal pans on a 36 in. module. Available in two widths 18 in. and 12 in., the pans are scored to provide the appearance of two 18 in., or three 12 in. squares.

The large pans permit T tracks to be spaced at greater intervals, cutting down on the amount of mechanical work needed to hang the units. One pan covers either 3 or 4½ sq ft.

The ceiling pans are perforated 26

"Nylon cord tires reduced off-the-road tire failures . . .

NOW NYLON CUTS TRUCK TIRE COSTS, TOO"

says R. O. LIPPI,

Truck Dept. Mgr., Pacific Coast Aggregates, Inc., San Francisco, Calif.

"When we saw how nylon cord tires cut costs in the toughest of off-the-road service, we began trying them on our trucks, too.

"The results were conclusive. Nylon cords practically eliminated bruise breaks and delays caused by tire failure. We haven't had one blowout with a nylon cord tire! And nylon cord tires give more retreads, more miles per dollar. We expect *double* the mileage we got from ordinary tires.

Switching Whole Fleet to Nylon

"We're sold on nylon—won't buy anything else. We have 126 ready-mix trucks, plus 124 other vehicles. We specify nylon cord tires on all new equipment, and we're replacing ordinary tires with nylon cords."

PROVE TO YOURSELF that nylon cord truck tires give more mileage, more retreads—lowest cost per mile. Ask your dealer about nylon cord truck tires today. (Du Pont makes the tough nylon yarns, does not produce tires.)

DU PONT NYLON for TIRE CORD

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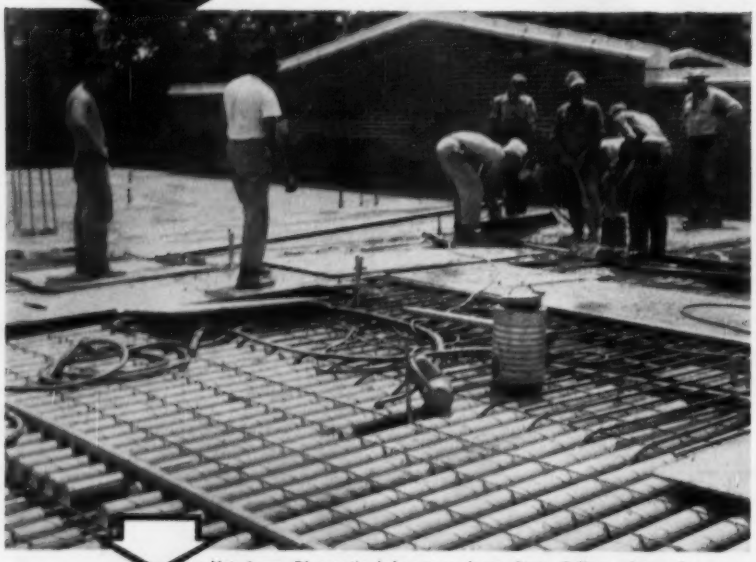
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

NOW . . . IN PASSENGER-CAR TIRES, TOO . . . THE STRENGTH OF NYLON . . . FOR UTMOST SAFETY . . . SUREST PROTECTION AGAINST TIRE TROUBLE.

SONOVOIDS®

reduce cost of floor and roof slabs!



Veterinary Diagnostic Laboratory, Iowa State College, Ames, Iowa. James A. Dougher, Architect, Des Moines. W. A. Klinger Co., Contractor, Sioux City.

SONOVOID®

FIBRE TUBES

for voids in concrete construction

Floor and roof slabs in this Iowa State College building contain voids created by SONOVOID Fibre Tubes. Slab weight was reduced which resulted in a savings on concrete and steel. Structural strength was not impaired.

Metal end closures were used in the SONOVOIDS and they were "tied" down by means of light weight steel reinforcing rods with spacers attached (see photo).

Easy to handle, low cost SONOVOIDS save time, materials and money. Use SONOVOIDS in concrete bridge decks, wall, floor, roof and lift slabs; also in concrete piles. For prestressed or poststressed precast units or units cast in place.

Available in lengths up to 50 feet or can be sawed to your requirements on the job, size 2.25" to 36.9" O.D. End closures available.

For complete technical information and prices . . . write

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SONOCO PRODUCTS COMPANY

CONSTRUCTION PRODUCTS DIVISION

HARTSVILLE, S. C. — MAIN PLANT

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MONTCLAIR, N. J. 14 SOUTH PARK STREET

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gage steel with a white alkyd finish. Noise reduction coefficients vary from .60 to .85 depending on the thickness and density of the fibrous glass sound absorbing pad contained in the pan. The system can be installed in a wet new structure, as none of the components are affected by moisture. Acoustics Manufacturing Corp., 17210 Gable Ave., Detroit 12, Mich.

Hot-Running Spark Plug Resists Deposit Build-Up

Maximum resistance to plug fouling under bad engine running conditions is claimed for a new spark plug introduced this month by Champion Spark Plug Co.

Using the principle of extreme clearance volume at the firing end, the plug is similar in many respects to the Turbo Action plugs that are now standard equipment in a major line of passenger cars. The new plug, designated the D-21, is hotter running than the Turbo Action plugs, and is installed with the conventional spark plug gasket rather than the tapered seat.

The design of the 18 mm D-21 plug, engineers explain, provides better charge cooling, which permits use of a longer insulator on the firing end so that a considerably greater volume of deposits can occur before interfering with engine operation. The plug is recommended for use in engines where frequent starts and stops, long periods of idling, or running at constant speed encourage the build up of deposits. Champion Spark Plug Co., Toledo, O.

Pneumatic Loaded Rolls Smooth Disc Mill Output

An adaptation of the German "Loesche Mill," a roller-type unit for grinding softer materials, has been introduced in the United States. Two rolls, shaped like truncated cones, bear against a horizontal rotating table. Material to be ground forms a bed on this table, flows after grinding over the outer edge by centrifugal force and is handled above by a forced air classifier.

The Hardinge Company modified European practice of applying pressure to the rolls by spring loading. Substitution of pneumatic cylinders is reported to iron out pressure fluctuations as varying size materials on the grinding table cause the rolls to ride high and low. Consistent pressure provides optimum grinding conditions.

Hardinge's standard Gyrotor air

classifier has been incorporated in the new disc roll mill. Simultaneous drying and grinding is thus readily obtained.

Materials such as limestone, phosphate rock, talc, clays, gypsum and raw cement mix may be ground to finenesses from 20 to 325 mesh. Mills are available with capacities up to 35 tons per hour for medium fineness specifications. HARDINGE CO., INC., YORK, PA.

Bucket Type Earth Drill Will Dig 200 Ft. Pit

A new model bucket drill will sink 200 ft holes 16 to 84 in. in diameter, removing 37½ cu ft of earth on each pass. The unit is built on a skid frame for mounting on truck or trailer. All equipment required for drilling operations is carried on one truck, so the unit is highly mobile.

All controls for the drill are centrally located for one man operation. Drilling, hoisting and dumping functions are controlled mechanically. Equipped with a full line of accessories, the drill is capable of handling most types of soil. The unit is adaptable for boring caisson holes, preboring concrete piles, digging belled footings, digging wells and cesspools, exploring mineral deposits and running soil condition tests. Identified as the model 200 A, the new drill is manufactured by CALWELD, INC., 7222 E. SLAUSON AVE., LOS ANGELES, CALIF.

Color Comes to Calculators As Slide Rules Turn Yellow

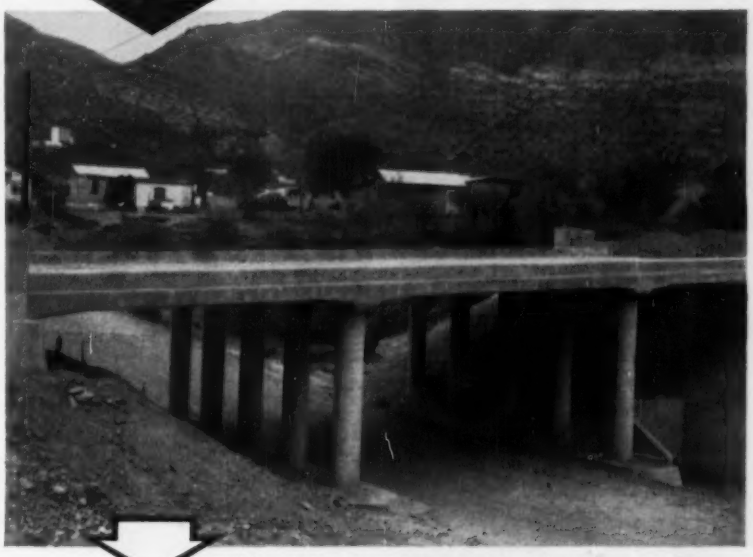
Blackboards have gone green, so have typewriter keys and paper. So it is not surprising to hear that the conventionally white slide rule is now coming out in yellow-green, a color that chromatic tests have shown results in less eye strain for the user.

Apparently, the blue end of the spectrum gives eye fatigue by placing the image in front of the retina of the eye, while the red end of the scale results in an image behind the eye retina. According to the manufacturer of the new-type slide rules, yellow-green scales with black figures focus the scales easily, give no glare, and aid accurate figuring by good contrast.

The producer puts out a light-alloy, non-corrosive slide rule, and now makes its 6-in. and 10-in. Trig and Log-Log standard rules in the new color. Rules are also made to order. Free catalog on request to PICKETT & ECKEL, INC., 1109 SOUTH FREMONT AVE., ALHAMBRA, CALIF.

SONOTUBES®

form 24-foot concrete column bridge piers for less cost!



Highway Bridge, Superior, Arizona, Arizona State Hwy. Dept., Geo. E. Lang, State Highway Engineer, Bentson Construction Co., Phoenix, contractors, S. W. Henderson, job superintendent.

SONOTUBE®

FIBRE FORMS

for round columns of concrete

SONOTUBES were used to form the round concrete pier columns for the Arizona State Highway Department bridge at Superior, Arizona.

Quick-time and material-saving erection was only one of the many advantages gained by the use of these fibre forms. Form oiling was completely eliminated; forms were easier to strip and the resulting concrete surface was smooth and dense and no hand rubbing was required.

These 24' SONOTUBES, 24" I. D., were poured in one rapid, practically continuous, operation.

Save time, money and labor . . . use SONOTUBE Fibre Forms to erect round columns of concrete!

Available in 26 sizes from 2" to 36" I. D. up to 50' long. Can be ordered in specified lengths or sawed to your requirements on the job.

Use Sonoco's patented "A-Coated" Sonotubes for finished columns; wax coated also available.

For complete technical information and prices . . . write

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* Flues and Ducts
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* Industrial Gas Mains
* Expansion Joints
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* Crane Bridge Girders
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Men and Jobs

Colorado Firm Establishes Special Engineering Unit

Geophoto Service, Denver Colo., has formed a soils and engineering section headed by James G. Johnstone, formerly an assistant professor of engineering geology and highway engineering at Purdue University.

The firm's new section will be concerned with applications of air photo interpretation in soils and engineering studies undertaken for such projects as highway, pipeline and transmission line locations; dam sites; industrial site selection; water supply problems.

Organized in 1946, the firm has previously engaged primarily in photo geologic evaluation and surface mapping for petroleum exploration.

Two Army Engineer Officers Retire From Active Duty

Formal ceremonies held at the Presidio in San Francisco last month marked the retirement of two officers in the Sixth Army Engineers.

One of the officers was Col. Halbert Fillinger, a veteran of 32 years of military service. He had served as assistant Sixth Army Engineer at the Presidio since his return in 1952 from four years in Germany as Chief of Repairs and Utilities, EuCom.

The other officer was Col. Norman H. Adams, who had served since 1954 as Chief of Plans and Training, Engineer Section, Headquarters Sixth Army. Assignments which he held during his 24 years of military service included World War II command of an engineer battalion in France and Germany, and duty as deputy engineer at Fort Richardson, Alaska. Later, he was a member of the Military Advisory Group in China.

Aluminum Company Names Assistant Chief Engineers

L. B. Kuhns, chief construction engineer, and B. J. Fletcher, chief hydraulic engineer, have been named assistant chief engineers for Aluminum Company of America. Both men will continue in their present positions.

With Alcoa since 1924, Kuhns was construction engineer for erection of major prewar facilities in Alabama, Washington, and Tennessee. He supervised much of Alcoa's vast wartime and postwar construction of aluminum plant facilities and became chief construction engineer in 1952.

Fletcher joined Alcoa in 1926, serving as an engineer at power facilities in Tennessee and North Carolina. He was named Alcoa's chief hydraulic engineer in 1952. For his wartime work on the atomic bomb project, he received a government citation.

Asphalt Institute Names R. B. McKeagney to New Post

The Asphalt Institute has promoted Robert B. McKeagney of Boston from New England district engineer to deputy division engineer for the Atlantic-Gulf Coast Division with headquarters at New York.

Before joining the institute in 1954, McKeagney spent 12 years with the Corps of Engineers in Boston, Norfolk and Richmond, Va. He was chief of the paving and materials section of the Corps' East Ocean Division.

Men and Jobs Briefs . . .

• **Associations**—The Kentucky section of ASCE names **John E. Herr, Jr.** of Louisville as president . . . **Frank McGuire** of Kirby & McGuire, Inc., Baltimore, Md., succeeds **A. H. Levine** of Baltimore Contractors, Inc., as head of the Baltimore builders chapter of AGC . . . **John F. Pearring,** formerly with the Idaho Department of Highways, is named district engineer in Denver, Colo., for the Asphalt Institute . . . **G. J. Alberici** of the J. S. Alberici Construction Co. in St. Louis, Mo., is elected president of the AGC of St. Louis.

• **Careers** — The Oregon Board of Health names **Kenneth H. Spies,** chief of the state's water pollution control division, as deputy state sanitary engineer . . . **Louis B. Kravetz,** an engineer with the Maryland State Roads Commission, is named bridge engineer for the Baltimore, Md., Bureau of Highways, succeeding **O. H. Schroedl,** who is appointed assistant director of public works for Baltimore . . . **John T. Morgan,** formerly with Weaver Construction Co., becomes public works superintendent at Kernersville, N. C.

• **Business**—A. B. Ordway, who joined Kaiser as a foreman in 1912, is named vice president and general manager of Kaiser Center, Inc.—he'll coordinate planning and construction of Kaiser Center . . . **J. Loyal Borton** and **Elmer C. Juhnke** are elected to the board of directors of The Osborn Engineering Company, Cleveland, Ohio.

speeds winter concreting gives faster, greater strength Columbia Calcium Chloride

Whether you're building roads or constructing buildings of concrete, Columbia Calcium Chloride in the mix saves you considerable time and money. Any time the temperature drops below 70 degrees F., you need Columbia Calcium Chloride to avoid lag in the set of concrete—and to assure high early and ultimate strengths.

It's easy to use this high grade calcium chloride—it can be added to the mix manually, or by automatic feeders. Calcium Chloride is easy to control, too, in either flake form or solution.

Here are some of the advantages you get when you add Columbia Calcium Chloride to your concrete mix

FASTER SET! Under normal conditions, Columbia Calcium Chloride will cut the initial set from three hours down to one, and the final set from six hours to two. The effects are even more pronounced at lower temperatures. Think what this means in getting finishers on the job fast . . . in avoiding costly overtime!

QUICKER EARLY STRENGTH! At 40 degrees F., for example, the strength of Columbia Calcium Chloride cured concrete is as great in one day as plain concrete is in two days—in three and a half days it is as strong as plain concrete after seven days! You can keep the job moving at cost-saving speed with Columbia Calcium Chloride!

INCREASED WORKABILITY! Increased workability without change in the water cement ratio when Columbia Calcium Chloride is used.

GREATER ULTIMATE STRENGTH! Ultimate strength as well as early strength, is greater through the use of Columbia Calcium Chloride. Typical increases from tests show 9% in 3 years, 10% in 5 years.

RELEASES FORMS FASTER! The use of Columbia Calcium Chloride means forms can be moved to other sections faster, cutting down on the total time required for the job, or releasing them for other jobs sooner. You have less money tied up in expensive forms.

Write today to our Pittsburgh address for complete information on Columbia Calcium Chloride for concrete curing.

COLUMBIA-SOUTHERN CHEMICAL CORPORATION
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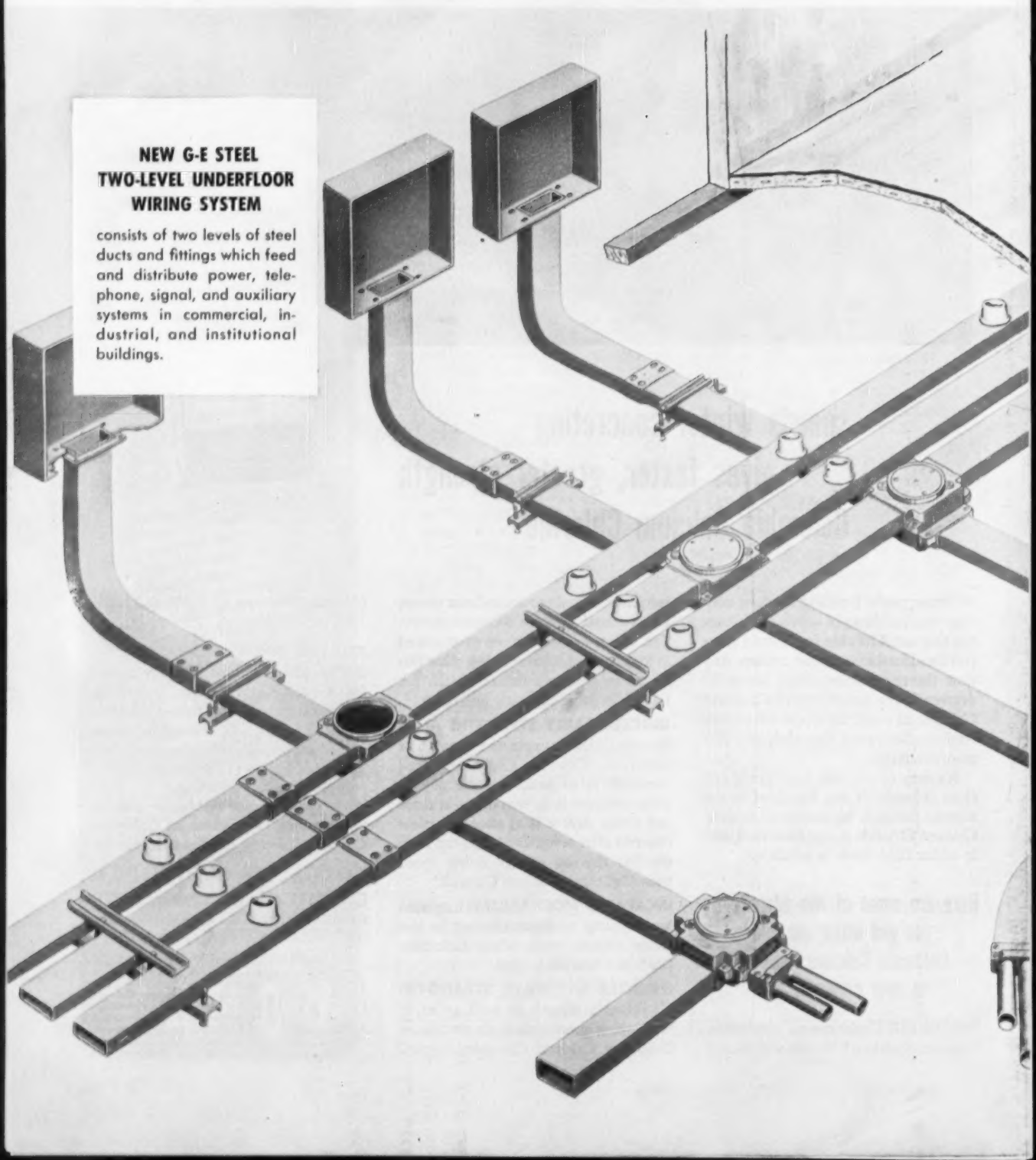
IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

General Electric Announces

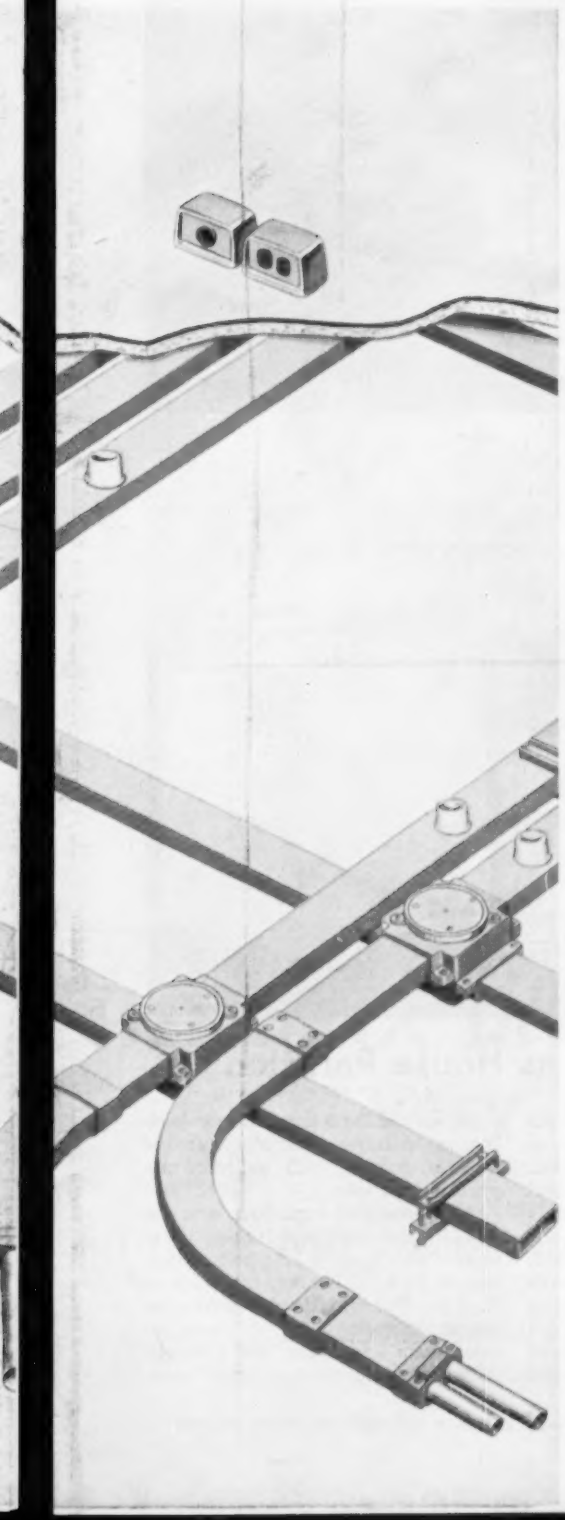
New TWO-LEVEL steel



NEW G-E STEEL TWO-LEVEL UNDERFLOOR WIRING SYSTEM

consists of two levels of steel ducts and fittings which feed and distribute power, telephone, signal, and auxiliary systems in commercial, industrial, and institutional buildings.

underfloor wiring system



- gives completely separate services
- permits unlimited number of duct feeds
- fits any predetermined floor layout
- allows unlimited number of services

A new two-level steel underfloor wiring system offering entirely new benefits to architects, engineers, electrical contractors, owners, and tenants has been announced by General Electric.

COMPLETE SEPARATION OF SERVICES because only single-duct junction boxes are used. Duct entrances are on two levels—usually with feeder duct below and distribution duct above. This separation allows unobstructed runs and permits conductors to be pulled straight through the boxes. No crossunders or crossovers are necessary in the new G-E two-level system.

FLEXIBILITY IN LAYOUT AND DESIGN is now possible because there are no limitations to the duct pattern in either the feeding or distribution portions of the two-level system.

ONLY ONE TYPE AND SIZE JUNCTION BOX TO INSTALL—contains no tunnels or barriers. Its entire interior is accessible for work and inspection. Wire pulling is easier and circuits are easy to trace because of two-level separation of all services.

INCREASED WIRING CAPACITY is provided for by the new steel duct (4-square inches cross-sectional area).

FIND OUT how this two-level system can help you distribute power, telephone, signal, and auxiliary systems. Get in touch with your nearest G-E Construction Materials District Office or write for information bulletin to Section C59-232, General Electric Company, Bridgeport 2, Connecticut.

Progress Is Our Most Important Product

GENERAL ELECTRIC

CONDUIT PRODUCTS DEPARTMENT

EASY, PROVEN WAY to PERMANENTLY BOND CONCRETE TO CONCRETE

WELD-CRETE®

Weld-Crete is the amazing liquid bonding agent which enables you to *permanently* bond new concrete *directly* to old concrete . . . or to most any other structurally sound surface . . . *without need for costly, time-consuming chipping, drilling, roughening, acid washing or scarifying of concrete base.*

Weld-Crete has equal bonding permanence all climates, all surfaces, all sorts of conditions. When used with quick setting cement topping you can lay new floors, ramps, driveways, etc. one day and run heavy truck traffic over them the next. Get facts from your building materials supply dealer or write Larsen Products Corp., Box 5756-I, Bethesda, Md.

TYPICAL **WELD-CRETE** APPLICATION

National Brick Co., Terra Cotta, D.C.

Here Weld-Crete was used to bond new ¾" concrete topping directly to old, badly chipped and spalled floor slab which had been subjected to ceaseless heavy truck traffic. Plant shut-down time eliminated as Weld-Crete enabled National's own mechanics to do job over week end.

SAVE MONEY

when pouring concrete

RENT ECONOMY STEEL FORMS

•

Easily and quickly assembled

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Complete supervisory service

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Adaptable to wide use

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Save time and material

•

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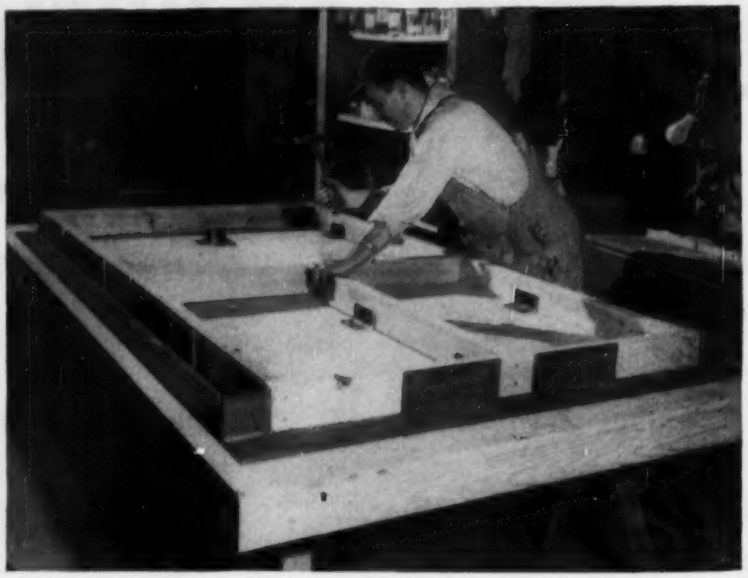
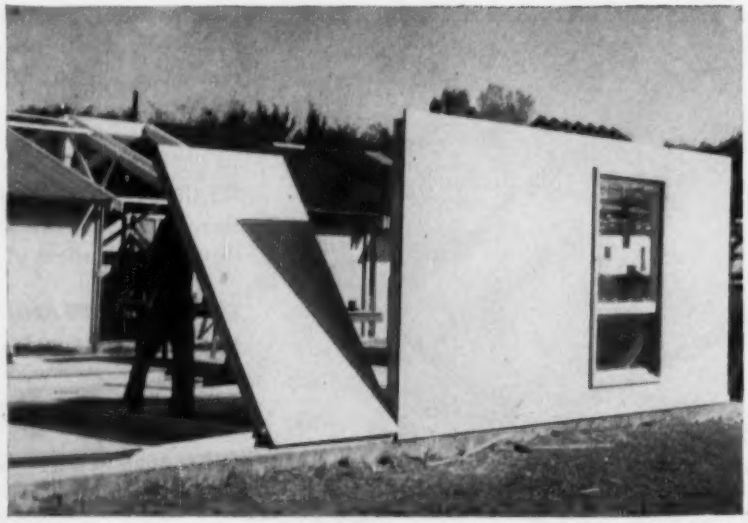


Jig-Fabricated Panel . . .



. . . Goes Up Fast as House Partition

New systems of panels for interior partitions and floors were introduced last week to builders at the Small Homes Council's 11th annual short course at the University of Illinois, Urbana, Ill. Both the partition and floor panels can be made on the same jig that is used for exterior wall panels developed by the council two years ago.

As part of the council's program of encouraging the use of preassembled parts in building, the new non-load-bearing partition panels consist of 2 x 4 in. framing with wallboard applied on one side.

Also presented were four new designs for nail-glued roof trusses. These include two types of king-post trusses, one of 2 x 4 in. lumber, the other of 2 x 6 in., that were developed for simplicity and economy; a "W" truss developed for long spans; and a sloped-ceiling, plywood-web roof "truss" span-

. super highways

. giant dams

. elaborate waterways

. new construction

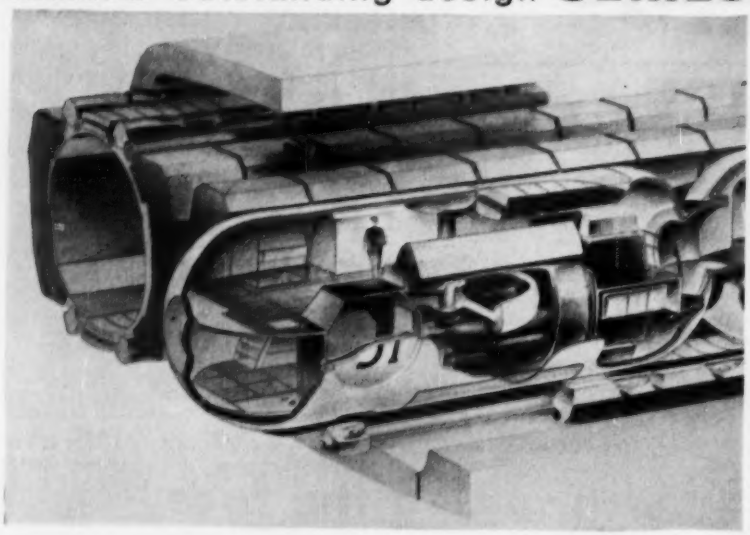
HENDRIX Dragline Buckets
. . . very much in the picture

A TYPE FOR EVERY DIGGING PURPOSE ¼ to 40 Cubic Yards

Hendrix Lightweight DRAGLINE BUCKETS

HENDRIX MANUFACTURING CO., Inc.
MANSFIELD, LOUISIANA

MARS outstanding design **SERIES**



man and motion:

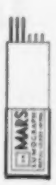
The wonders of the future are still little whispers in men's minds, or maybe — like Detroit Designer Norman James' magnetically suspended inter-city train — a drawing on a piece of paper. Traveling in a vacuum in an air-tight tube, it floats in space, held by a system of magnets built into cars and tunnel. Propelled electrically by "rolled-out" motor, train acts as rotor, tunnel roof as stator. Converter aboard train changes light projected through windows into electrical energy.

No one knows which ideas will flower into reality. But it will be important in the future, as it is now, to use the best of tools when pencil and paper translate a dream into a project. And then, as now, there will be no finer tool than Mars—sketch to working drawing.

Mars has long been the standard of professionals. To the famous line of Mars-Technico push-button holders and leads, Mars-Lumograph pencils, and Tradition-Aquarell painting pencils, have recently been added these new products: the Mars Pocket-Technico for field use; the efficient Mars lead sharpener and "Draftsman's" Pencil Sharpener with the adjustable point-length feature; and — last but not least — the Mars-Lumochrom, the new colored *drafting* pencil which offers revolutionary drafting advantages. The fact that it blueprints perfectly is just one of its many important features.

The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H—$1.50 per dozen*. The 1001 Mars-Technico push-button lead holder — $1.50 each*. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H—$1.20 per dozen*. Mars-Lumochrom colored *drafting* pencil, 24 colors—$1.50 dz.*

*Less in quantity



J.S. STAEDTLER, INC.
HACKENSACK, NEW JERSEY

at all good engineering and drawing material suppliers

ning up to 32 ft 8 in. for use in houses with sloping roofs.

Builders attending the two-day conference also heard suggestions for demountable houses of the future offered as a method to avert slum areas and declining neighborhoods. Plastic and steel houses that fulfill these requirements are now being studied at the University of Illinois, Massachusetts Institute of Technology and the University of Michigan.

Obituaries

Samuel Weishoff, 66, consulting structural steel engineer and a partner in the New York firm of Weinberger, Weishoff, Leichtman & Quinn, died Jan. 12. A civil engineering graduate of Cooper Union, Weishoff formed a partnership with Weinberger in 1922 and did structural steel design work for many well known buildings throughout the nation and abroad, including Madison Square Garden, the Capitol Theatre and other theatres in New York and London. Weishoff was a member of the American Society of Civil Engineers, the American Concrete Institute and the American Welding Society.

Alfred R. Krehbiel, 61, a civil engineer who aided in the development of several Buffalo suburbs, died Jan. 18. He had been an engineer for the town of Tonawanda for more than 25 years, and also was in private practice with his son, Theodore. Krehbiel was a 1917 graduate of Rensselaer Polytechnic Institute.

Albert Vander Naillen, 97, former Alameda, Calif., County official and civil engineer, died Jan. 8. In county service for 30 years, he was deputy county surveyor from 1921 until his retirement in 1948. Vander Naillen was previously associated with the Vander Naillen School of Engineering, established by his father in 1871 in San Francisco and later in Oakland, as a student, teacher and finally president. The school closed in 1917.

Henry G. Throop, 75, retired civil engineer, died Jan. 12 in Syracuse, N. Y. Prior to joining Carrier Corp. as a construction engineer in 1943, he was a general contractor in Syracuse for many years. Throop retired from Carrier in 1954. He was a civil engineer graduate of Cornell University.

Daniel S. DuBose, 64, former county engineer of Marion, Fairfield and Darlington counties, S. C., died recently. He was a civil engineer graduate of the Citadel.

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Air conditioning ducts on building exteriors can be unsightly. Gold Bond CORRUGATED ASBESTONE makes a practical housing for ducts of this sort. Installation is easy ... big, lightweight sheets go up fast. And CORRUGATED ASBESTONE has the necessary rigidity and durability to last a building's lifetime. Used for this air conditioning tower, rock-like ASBESTONE is extremely economical. It never needs maintenance... stands up against all weather and corrosive action.

How many uses can you think of for Gold Bond CORRUGATED ASBESTONE? Whether it's in remodeling or new construction, commercial or industrial, ASBESTONE creates striking good looks and permanence —means added strength and lower maintenance. Write for full details on this versatile, good looking material. Address Dept. EN-26, National Gypsum Company, P. O. Box 5257-B, New Orleans 15, La.

Gold Bond Technical Bulletin No. 2092, and Booklet No. 2273 give full specifications and uses of Gold Bond CORRUGATED ASBESTONE Products.

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SECTION REPAIRS — Can be handled on any tire with Firestone's repair facilities.

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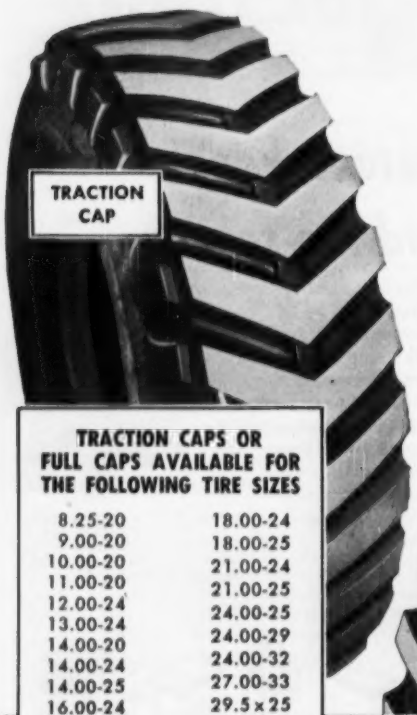

YOU'RE time and money ahead when you let Firestone handle your repair and retreading needs.

You cut your tire maintenance costs because Firestone is equipped to do the job better, quicker and at lower cost.

You save with Firestone Traction Cap retreads or Firestone Full Cap retreads because they stand up longer and keep your downtime at a minimum. Firestone Retreads have the proved Firestone new tire tread design for greater traction, greater driver control, more hours of service.

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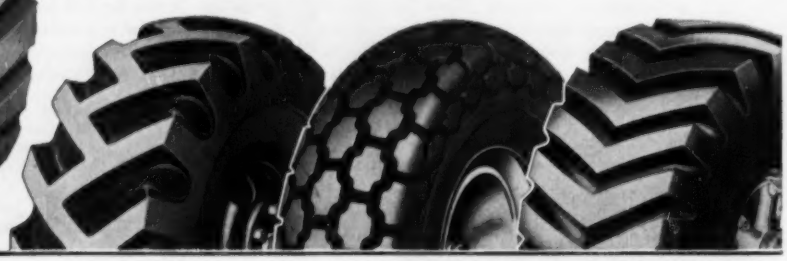
TRACTION CAPS OR FULL CAPS AVAILABLE FOR THE FOLLOWING TIRE SIZES

8.25-20	18.00-24
9.00-20	18.00-25
10.00-20	21.00-24
11.00-20	21.00-25
12.00-24	24.00-25
13.00-24	24.00-29
14.00-20	24.00-32
14.00-24	27.00-33
14.00-25	29.5 x 25
16.00-24	30.00-33
16.00-25	



GROUND GRIP FULL CAP | **ALL NON-SKID FULL CAP** | **ROCK GRIP FULL CAP**

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After the Great Ford Foundation Gift . . .

What Still Remains To Be Done To Provide Decent Faculty Pay

The Ford Foundation's gift of a half billion dollars to our privately supported colleges, medical schools and hospitals, now being distributed, is magnificent. But it will be much more magnificent if it inspires completion of the job to which it gives a lift. So far as the colleges and universities are concerned, this job is primarily to rescue their faculty members from being second-class citizens economically.

Even in a period when we have become accustomed to astronomical financial figures, a half billion dollars remains an eye-popping gift. In fact, it is so imposing that a good many people who don't read the fine print are apt to conclude that it must just about solve the financial problem to which it is addressed.

Goes Only a Small Way

However, we have allowed college professors to fall so far behind the parade financially that the share of the Ford half billion dollar gift going directly to the improvement of faculty salaries ($210 million) will go only a small way financially toward doing what is necessary to provide adequate salaries.

Completion of this job for our privately supported colleges and universities calls for:

1. An increase in faculty salaries at least five times as great as that made possible by the Ford gift merely to restore salaries to their 1939 purchasing power level and an increase fifteen times as great to provide adequate salaries today.

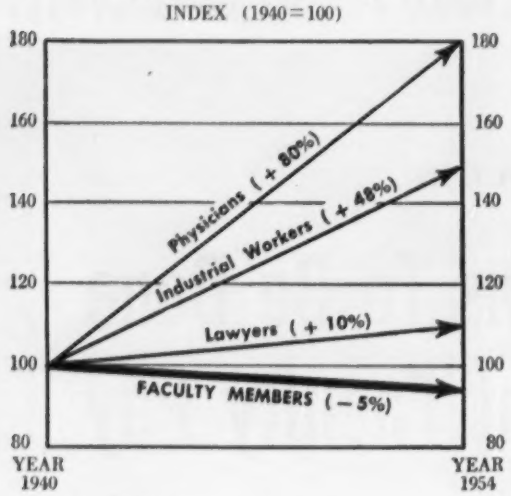
2. Some difficult and courageous decisions by the heads of the colleges and universities in apportioning the grants received by them.

Terms of Gifts to Colleges

The $210 million of the Ford Foundation gift going specifically to improve faculty salaries is being distributed on the following basis: Each of 615 privately supported, regionally accredited liberal arts and science colleges and universities receives a gift about equivalent to its last year's teaching payroll. For ten years only the income from these gifts is to be devoted to raising faculty salaries. After that all the money can be spent in any way the institutions receiving it see fit. There is no requirement that universities having other than liberal arts and science schools limit use of the gifts to improving salaries in these schools alone. They can spread it right through all their faculties if they wish.

In addition to the gift of $210 million specifically directed to increasing faculty salaries, another gift of $50 million goes to a group of 126 institutions selected for specially noteworthy leadership in improving

What's Happened to College Faculty Salaries*



* Real Income before Taxes.

Source: Council for Financial Aid to Education; U. S. Dep't of Commerce; U. S. Dep't of Labor.

the status and pay of teachers. For these schools the individual gifts add about 50% more to the amounts coming from the $210 million fund. They can be used to improve faculty salaries if the institutions choose to do so, but this is not required by the terms of these gifts.

The $210 million plus the $50 million should yield an income of $10-$13 million a year. Even if all this is used to raise salaries, it will be only a small step, however worthy, toward the $200 million per year the colleges need to meet their salary requirements adequately.

Helps Some Who Need It Most

In focussing its gift to improve faculty salaries in privately supported liberal arts and science colleges, the Ford Foundation aims at least part of the help at the spot where it is most desperately needed. Numerous surveys have indicated that the most poorly paid of all college and university faculty members are those in small, privately endowed liberal arts colleges.

But the overshadowing fact is that the teachers in our colleges and universities as a whole are badly underpaid. Just how badly is indicated by the chart above which first appeared in an earlier editorial. (Figures later than those for 1954 are not available.)

The Ford gift will turn the indicator of faculty salaries, which now lies far below the general salary trend, upward a few points. And it will do this in some places where salaries are below the wretched average shown by the chart.

But the Crucial Test Remains

College and university administrators will have the opportunity to extend further the process of getting the help provided by the Ford Foundation gifts where it is most needed. In general, this will mean giving it to senior faculty members, in order to hold experienced teachers and make college teaching attractive as a career. But to make such a division in many schools will take extraordinary fortitude.

The crucial test of the success of the enterprise of the Ford Foundation in raising faculty salaries will lie in whether it prompts the rest of us — college alumni, individuals, business firms and legislators alike — to see that it is a great beginning, not a signal for a recess.

Even with the Ford gifts providing $10-13 million a year, our privately supported colleges and universities must have an increase of about $190 million a year to provide decent faculty salaries.

This is a job far beyond the capacity of the Ford Foundation, imposing though that is. It is a job far beyond the capacities of a few hundred large corporations and a few thousand wealthy individuals. If it is to be done, it is a job at which all of us must work with a will.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw
PRESIDENT

McGRAW-HILL PUBLISHING COMPANY, INC.

Versatile D Tournapulls save time for Illinois contractor

Handle production dirt and finish work

On U.S. 66 near Pontiac, Illinois, 650,000 cu. yds. of clay and topsoil are being moved to widen 25 miles of this highway.

On the job, the Standard Paving Co., of Chicago, encountered production difficulties when 2 of their 4 scrapers broke down. To keep production dirtmoving on schedule, one 28 mph D Tournapull was moved from shouldering work to production hauling. A second "D" remained on fine grade and other one-man-crew clean-up assignments.

8400′ cycle every 8 minutes

Working with a pusher from a borrow pit, the 138 hp "D" loaded 5½ pay yards of tough-to-handle clay in about 30 seconds. "D's" ability to partially self-load saved time and work for pusher on loading cycle. Haul, spread, and return took about 7 minutes. 8400′ cycle was completed in 7½ minutes. Cycle time for other scraper units averaged about 9.5 minutes. Despite the fact that "D" was working with bigger rubber-tired dirtmovers, it matched, and often bettered the speeds of bigger units on haul and return trips.

Second "D" on fine grading

The second D Tournapull was being used with a motor-grader to fine-grade before paving courses were put down. It self-loaded excessive dirt windrowed by grader. Unit averaged 1¾ minutes on 350′ cycle. Operator Henry Carbine said, "The 'D' is the best machine for fine-grading."

Tops for any job

You'll find, as did this contractor, that the versatile D Tournapull is a mighty handy tool to have in your fleet. It is ideal for hauling, grading, building shoulders, shaping backslopes, digging drainage ditches, spreading gravel, connecting access roads, backfilling around culverts, leveling land, stripping overburden, and doing dozens of other scattered small clean-up jobs that turn up. It is a machine that can work and earn every day of the year.

Speeds job-to-job

D Tournapull runs at 28 mph from job-to-job. Big 18:00 x 25 low-pressure tires allow unit to travel anywhere . . . over pavement, blacktop, curbs, railroad tracks and bridges. Extreme mobility of "D" saves time by allowing it to take the shortest route to job. To find out what the 7-yd. D Tournapull can do for you on your next dirtmoving job, see your LeTourneau-Westinghouse Distributor. He'll be glad to show you owner-verified production figures

"D" self-loads, hauls and spreads windrowed material on 350′ cycle in about 1¾ minutes.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-875-H-b

LeTourneau-WESTINGHOUSE Company

Peoria, Illinois

A Subsidiary of Westinghouse Air Brake Company

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. FELIX, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲ **Mass., Dracut**—SCHOOL—BA 2/15—Town, Paul H. Phaneuf, supt. Schools, Junior-Senior High School, Lakeview Ave. $2,000,000. Plans deposit $100, refundable. Hugh Stubbins Assoc., 78 Mt. Auburn St., Cambridge, archts. CD 1/10.

BUILDINGS—SLC

▲ **Mass., Boston**—PAULIST CENTER—Missionary Society of St. Paul the Apostle, Paulist Fathers, 5 Park St., soon lets contract Paulist Center. $1,000,000. Maginnis & Walsh & Kennedy, 126 Newbury St., Boston, archts. CD 1/11.

HEAVY CONSTRUCTION—LB & CA

† **Wexler Constr. Co.,** 118 Needham St., Newton Highlands, Mass. CA $898,000, est. $700,000-$800,000. three airmen's dormitories, Dow Air Force Base, ENG-19-016-56-66, BANGOR, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. CD 12/29, under LB.

▲ **NEW HAMPSHIRE** — State Dpt. P. Wks. & Hys., Concord,

R. G. Watkins & Son, Inc., Mill Yard, Amesbury, Mass. CA $1,941,250, est. $2,000,000. highway and bridge, Spaulding Turnpike, Dover. Bids Dec. 29. CD 1/5, under LB.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

S. & M. Constr. Co., 30 Salmon St., Providence, R. I. CA $2,885,384. hy. constr. Amvets Memorial Hy., U-344 (6), Brockton, Avon, Stoughton. CD 12/27, under LB

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Gilbane Building Co., 90 Calverly St., Providence, R. I. CA $533,910, est. $390,000. Westville Bridge, Southbridge and Sturbridge. CD 12/21, under LB.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

Frank J. Shields, Inc., 91 Central St., Southbridge, Mass. LB $594,253, est. $325,000. hy. and bridge Rte. 9, Ware. Bids Jan. 17. CD 12/28.

BUILDINGS—LB & CA

Carroll, Verge & Whipple, Inc., 370 Wahconah St., Pittsfield, Mass., LB $498,325, est. $479,000. HIGH SCHOOL, Van Gulider Property, FAIRHAVEN, VT. Town, supt. Schools, Town School District, Fairhaven, Vt. Freeman, French & Freeman, 158 Bank St., Burlington, Vt., archts. Bids Jan. 17. (Note architects' change of address). CD 12/29.

▲ **Building Contractors, Inc.,** Catilina Dr., Springfield, Mass. Owner Builds. $1,800,000. RESIDENTIAL DEVELOPMENT, 150 residences, SPRINGFIELD, MASS. Smith & Wallen Engineering Co., Inc., 602 White St., Springfield, Mass., site planner.

▲ **Gerald Spear, Inc.,** Bradley Rd., Springfield, Mass. Owner Builds. $3,000,000. RESIDENTIAL DEVELOPMENT, 250 houses, Bradley Rd., SPRINGFIELD, MASS.

▲ **George Vadnais Constr. Co., Inc.,** 49 Chapin Terrace, Springfield, Mass. Owner Builds. $1,800,000. RESIDENTIAL DEVELOPMENT, 150 houses, Parker St., SPRINGFIELD, MASS.

Ware Lumber Co., Mechanic St., Ware, Mass. Owner Builds. $750,000. RESIDENTIAL DEVELOPMENT, 60 houses, WARE, MASS.

Wadhams & May Co., 15 Lewis St., Hartford, Conn., CA, $665,000. 3 story NURSES' HOME addn., NORWALK, CONN. Norwalk Hospital Assoc., Norwalk, Conn. Awarded Jan. 18. CD 1/11, under LB.

MIDDLE ATLANTIC

BUILDINGS—SLC

▲ **N. Y., Tarrytown** — MOTEL — Sheraton Corp. of America, lessee, 470 Atlantic Ave., Boston, Mass., soon lets contract 6 story, 161x171 ft. motel for Miller-Hill Interests, c/o Benjamin Whitestone, 11 W. 42 St., New York, N. Y. $2,000,000. Mary M. Kennedy, c/o lessee, archt., Maurice A. Reidy, 101 Tremont St., Boston, Mass., struct. engr. CD 6/6.

HEAVY CONSTRUCTION—LB & CA

▲† **Morrison-Knudsen Co., Inc., Walsh Constr. Co., & Perini-Quebec,** 122 E. 42 St., New York, N. Y. CA $20,172,451 (joint venture) (6 bidders) constr. Robinson Bay Lock, 860 ft. long, 80 ft. wide, 30 ft. deep over the sills, maximum lift of 49 ft., 3½ mi. northeast of Massena, St. Lawrence Seaway, NEW YORK. U. S. Eng., Engineer Park, Niagara and Bridge Sts., Buffalo 7, N. Y. CD 1/18, under LB.

Harry Hershon Co., 1860 Broadway, New York 23, N. Y. LB $453,880 (8 bidders) platform extens., gap fillers at Brooklyn Bridge Station of Lexington Ave. Line, Manhattan Boro, Contr. No. C-111, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Jan. 20. CD 1/4.

▲ **PENNSLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Wagner Constr. Co., 115 S. Wyoming Ave., Kingston, Pa. CA $1,092,759. constr. 4.77 mi. rein.-con. pavement, 3 concrete boxes and wid'n existing pavement from Tunkhannock Boro, northwest to Russell Hill, U. S. Rtes. 6 and 309, Wyoming Co. CD 1/11, under LB.

▲ **Devlin Electric Constr. Co. & E. C. Ernst, Inc.,** 320 Grant Ave., Pittsburgh, Pa. CA $1,940,859. Contr. 41, electrical work sewage plant, incl. distr. system, road lighting and exterior electrical work, PITTSBURGH, PA. Allegheny County Sanitary Auth., 701 Civic Bldg., 200 Ross St., Pittsburgh 19, Pa. Bids Dec. 20. CD 10/24.

BUILDINGS—LB & CA

▲ **Bermuda Homes,** c/o B. R. Levinson, archt., 167-16 Hillside Ave., Jamaica, N. Y. Owner Builds. $1,650,000. 150 HOMES on tract at Brentwood Rd. and New Hampshire Ave., BRENTWOOD, N. Y.

▲ **Commack Shopping Center,** c/o A. H. Salkowitz, archt. 87-25 Homelawn St., Jamaica 32, N. Y. Owner Builds. $3,000,000. SHOPPING CENTER, incl. 40 stores, on 26 acre tract on Jericho Turnpike, COMMACK, N. Y.

▲ **Brookside Estates,** c/o N. M. Obedin Co., 124 Jackson St., Hempstead, N. Y. Owner Builds. $1,000,000. 87 HOUSES on tract on Venetian Promenade south of Montauk Hy., COPIAGUE, N. Y.

Gabsal Homes, Inc., c/o Elrod Realty Co., 192 Hillside Ave., Williston Park, N. Y. Owner Builds. $650,000. 25 HOUSES on tract on Northern Blvd., EAST NORWICH, N. Y.

Underhill Estates, c/o Butterly & Green, Inc., 168-25 Hillside Ave., Jamaica, N. Y. Owner Builds. $750,000. 50 HOUSES on tract at St. Marks Ave. and Lewis St., FREEPORT, N. Y.

Samart Homes, c/o Kuchler & Levitt, archts., 775 Brooklyn Ave., Baldwin, N. Y. Owner Builds. $600,000. 20 HOUSES on tract on Duck Pond Rd., GLEN COVE, N. Y.

▲ **San Souci Homes,** c/o Schulman & Soloway, archts., 100-15 Queens Blvd., Forest Hills, N. Y. Owner Builds. $5,000,000. 120 HOUSES on 50 acre tract on Davenport Rd., NEW ROCHELLE, N. Y.

▲ **Diesel Constr. Co.,** 625 Madison Ave., New York, N. Y. CA Est. $2,000,000. 21 story OFFICE, Third Ave. and 41 St. to be called 630 Third Ave., NEW YORK, N. Y. Syndicate, c/o contractor. Emery Roth & Sons, 575 Madison Ave., New York 22, N. Y., archts.

▲ **MacArthur Constr. Co.,** 101 Park Ave., New York 17, N. Y. CA Est. $1,250,000. 16 story OFFICE and STORE, 401-405 Park Ave., NEW YORK, N. Y. 405 Park Ave., Inc., 342 Madison Ave., New York 17, N. Y. CD 10/28/54.

▲ **Oakdale Lawns Homes,** c/o Charles H. J. Bogel, 280 Main St., Sayville, N. Y. Owner Builds. $1,500,000. 143 HOUSES on tract at Montauk Hy. and Locust Ave., OAKDALE, N. Y.

▲ **L. B. Strandberg & Son Co.,** 608 S. Dearborn St., Chicago, Ill. LB $1,620,625. (6 bidders) GYMNASIUM for State University of N. Y.-Harpur College, VESTAL, N. Y. Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Jan. 19. CD 3/18/54.

▲ **Westgate Homes,** c/o Charles H. J. Bogel, 280 Main St., Sayville, N. Y. Owner Builds. $2,350,000. 112 HOUSES on tract at Wagstaff Lane and Montauk Hy., WEST ISLIP, N. Y.

Herman Lewis, c/o Lane Realty Co., 107-40 Queens Blvd., Forest Hills, N. Y. Owner Builds. $720,000. 30 HOUSES on tract east of Mamaroneck Ave. near Ridgeway, WHITE PLAINS, N. Y.

▲ **Pine Grove Manor,** c/o William G. Chirgotis, archt., 968 Stuyvesant Ave., Union, N. J. Owner Builds, $2,000,000. co-operative GARDEN APARTMENTS, 20-acre tract on Franklin Blvd. between Phillips Rd. and Matilda Ave., NEW BRUNSWICK, N. J.

▲ **S. & G. Padula Builders Inc.,** 181 N. Washington Ave., Bergenfield, N. J. Owner Builds, $2,000,000. 80 HOUSES on 20-acre tract on Tenafly Rd. TENAFLY, N. J. Harsen & Johns, Summit St. and E. Railroad Ave., Tenafly, N. J., archts.

B. Bornstein & Son, 2027 Arch St., Phila., Pa. CA $730,000 general constr. Elementary SCHOOL, Palmer and Thompson Sts., PHILA., PA. Bd. Educ., 21 and Winter Sts., Phila., Pa. CD 12/23, under LB.

▲ **Robert E. Lamb & Son,** 3429 Indiana St., Phila., Pa. CA Est. $2,000,000. design and construct mustard, spice and bird food PLANT and WAREHOUSE, 1 story, 213,000 sq. ft. with railroad siding, SOUDERTON, PA. R. T. French Co., 1 Mustard St., Rochester, N. Y.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction
(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily issue in which last previous report was published.
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

SOUTH

HEAVY CONSTRUCTION—LB & CA

† **Ballenger Paving Co.,** P. O. Box 927, Greenville, S. C., CA, $446,790. aircraft parking apron and taxiway, Dobbins Air Force Base, ENG-09-133-56-8, MARIETTA, GA. U. S. Eng., 200 E. St. Julian St., Savannah, Ga. Bids Dec. 15. CD 12/2.

▲† **Fordice Constr. Co.,** 42 Porter Bldg., Memphis 3, Tenn. CA $803,470. 80,000 squares articulated concrete mattress at Delta Casting Field, Delta, LOUISIANA. U. S. Eng., P. O. Box 60, Vicksburg, Miss. Bids Dec. 29, CD 12/14;
T. L. James & Co., Inc., Ruston, La. CA $490,140. 50,000 squares articulated concrete mattress at Vidalia Casting Field, Vidalia, (Louisiana)

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

W. R. Fairchild Constr. Co., Box 31, Hattiesburg, Miss. CA $802,969. road work, I-beam bridge, 2.517 mi. State Rte. 34, S. P. 714-02-23, St. Tammany Parish. CD 1/3, under LB.

▲† **Weymouth Constr. Co.,** P. O. Box 319, Memphis, Tenn. CA $1,002,240, casting concrete mattress at Richardson Landing, CIVENG-40-041-56-77, TENNESSEE. U. S. Eng., P. O. Box 97, Memphis, Tenn. Bids Dec. 20, CD 1/5, under LB;
Wright Contg. Co., P. O. Box 1580, Columbus, Ga. CA $796,320, casting concrete mattress at Cates Landing, CIVENG-40-041-56-77 (Tennessee).

BUILDINGS—LB & CA

▲† **Algernon Blair, Inc.,** 1209 First Natl. Bank Bldg., Montgomery, Ala., CA $2,765,738. 127 units, permanent HOUSING, ENG-44-110-56-13, FORT EUSTIS, VA. U. S. Eng., foot of Front St., Norfolk 1, Va. Bids Dec. 21. CD 1/5, under LB.

▲† **Algernon Blair, Inc.,** 1209 First Natl. Bank Bldg., Montgomery, Ala., CA $1,061,407. 76 units, permanent family HOUSING, ENG-44-110-56-12, FORT LEE, VA. U. S. Eng., foot of Front St., Norfolk 1, Va. Bids Dec. 21. CD 1/5, under LB.

▲† **Thompson & Street Co.,** 505 Builders Bldg., Charlotte, N. C., CA $1,582,201, Rehabilitation and Construction IV Charlotte Ordnance MISSILE PLANT, IFB ENG-31-075-(56)-1, CHARLOTTE, N. C. U. S. Eng., 308 Customhouse, Wilmington, N. C. CD 10/15/54.

Forbes & Taylor, Inc., 1400 Forbes Rd., Lexington, Ky. CA $582,000. Catholic High SCHOOL, LEXINGTON, KY. Catholic Diocese of Covington, Madison Ave., Covington, Ky. CD 12/1, under LB.

(Continued on page 68)

Wide bowl-opening on Rear-Dump provides easy entry, big target for shovel, dragline, or conveyor loader. Units come in 11, 22, and 35-ton capacities.

Smooth, streamlined, unobstructed body dumping at 66° angle readily sheds sticky material.

Hauls to overburden dump are made at speeds up to 32 mph by this C Rear-Dump.

Big-tire haulers beat mud problem

A Canadian company had the problem of stripping 30 to 75-ft. layer of wet clay out of rock pockets. Soft and sticky with trapped-in moisture, this overburden was loaded by draglines, and hauled half a mile to waste dumps. Four C Tournapull Rear-Dumps were used to speed hauling.

Exceptional mud-ability

As owners everywhere have found, Tournapull Rear-Dumps go through mud which stops conventional truck-type haulers. On this overburden job, for example, these Rear-Dumps worked out of deep mud-holes in the pit and off dumps so soft a man could not walk through them. The exceptional mud-ability they showed is due partly to traction of big 21.00 x 25 low-pressure tires . . . partly to electric power-steer through geared kingpin which "walks" Tournapulls out of trouble . . . partly to exclusive differential which *automatically* transfers power from slipping wheel to wheel on firmer footing.

On rough haul-roads, Rear-Dumps with 5'6" diameter tires haul faster than trucks. The big tires grip and roll over the bumps, cushion machinery and operator from road shocks.

Turn around non-stop

These Rear-Dumps also work faster and with greater safety in narrow quarters than conventional haulers. They turn around in much less space. When bowl is raised, they shorten wheel-base to turn non-stop in an area about 1/3 less their overall length. This maneuverability speeds haul on narrow roads, reduces spotting time at shovel and dumps.

Dump fast and clean

Practically no clean-up is needed on the dump. With front-wheel drive, Rear-Dumps back safely to edge of bank. Bowl swings behind and below rear wheels . . . loads fall free and clear over the edge, with little spillage, seldom call for clean-up.

Ask your LeTourneau-Westinghouse Distributor to show you first-hand how Rear-Dump advantages can pay off on your work.

Rear-Dumps now available with optional tailgate.

Tournapull—Trademark Reg. U.S. Pat. Off. R-982-G-bw

LeTourneau-WESTINGHOUSE Company

Peoria, Illinois

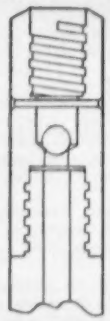
A Subsidiary of Westinghouse Air Brake Company

new acker Lynac* split tube sampler

increases service life 100%

HERE'S WHY

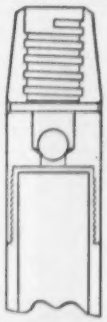
LYNAC



Thick, heavy, rugged barrel and head increase service life by 100%!

Note the thick shoulder of the LYNAC Head.

ORDINARY



Thin, weak barrel and head are easily damaged.

Compare the thin, easily cracked shoulder of the standard head.

Acker engineers have done it again! By improving the design and construction of the standard split tube samplers, Acker engineers increased the service life of their new LYNAC Sampler by over 100%!

Look over the drawings at the left and you'll see why. Then, write for literature describing Acker's new LYNAC Sampler.

ASK FOR COMPLETE CATALOG ON SOIL SAMPLING

ACKER DRILL CO., Inc.

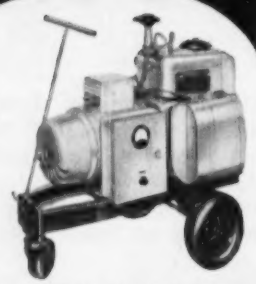
SCRANTON 3, PA., U.S.A.

*Patent applied for

Power Plants Speed Construction

USE POWER TOOLS—FLOOD LIGHTS

WINPOWER PORTABLE ELECTRIC PLANTS provide a dependable, low cost power source . . . speed up work performance by operating time and labor saving power tools. Wherever the job—whatever the need—you can count on a WINPOWER Electric Plant to meet your requirements.



A Different Size For Every Need

800 WATTS To 100 KW

All Standard Phases and Voltages

These rugged, heavy-duty 3-wheel dollies are used as a permanent mounting for 3, 4, and 5 KW electric plants where portability is desired by contractors, bridge builders, mine operators, road constructors, railroads, cities and municipalities.

Trailer-Mounted Floodlight Unit

MAKE NIGHT HOURS PAY with NITE-HAWK

Four 80,000 c.p. flood lights raise to 8½ ft.—aim in all directions. Control panel has duplex receptacles for extension light and power tool lines—voltage regulator—circuit breakers—fused circuits.

Tows at highway speeds on heavy-duty trailer with leaf springs—retractable caster wheel. This is the finest, most flexible unit available. 5 KW, 115 or 230 Volt.

Powered by Wisconsin 4 cylinder, air-cooled engine

WRITE FOR LITERATURE AND PRICES G-52

WINPOWER MFG. CO.

Dept. 652 Newton, Iowa

(Continued from page 66)

† Rentenbach & Wright, Inc., P. O. Box 411, Kingsport, Tenn., CA $359,000, est. $384,358, addn. to BUILDING K-1004L, K-25 area, Inv. 401-56-2A, OAK RIDGE, TENN. U. S. Atomic Energy Comn., P. O. Box E, Oak Ridge, Tenn. Bids Dec. 13. CD 12/2.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲† George W. Timmons Co., 780 W. Lane St., Columbus, LB $2,259,440, est. $1,999,507, three dormitories, service club, gymnasium, flyaway kits storage, armament and electronics shop, Lockbourne Air Force Base, ENG-46-022-56-11, Columbus, O. U. S. Eng., 237 Fourth Ave., Huntington 19, W. Va. Bids Jan. 17. CD 12/16.

BUILDINGS—LB & CA

▲ Schirmer-Schneider Co., 2719 Detroit Ave., Cleveland 13, O. CA Est. $1,000,000 (8 bidders) Chanel HIGH SCHOOL, BEDFORD, O. Marist Order Corp. of Ohio, c/o Stickle & Assoc., archts., 2422 Prospect Ave., Cleveland 15, O. Bids Dec. 6, awarded Jan. 18. CD 12/1.

Albert M. Higley Co., 2036 E. 22 St., Cleveland 15, O. CA Est. $500,000. 2 story, 30,000 sq. ft. OFFICE BLDG., Euclid Ave., CLEVELAND, O. Arthur G. McKee & Co., 2300 Chester Ave., Cleveland 14, O. Awarded Jan. 16. CD 10/5.

▲ J. L. Simmons Co., Inc., Inland Bldg., Indianapolis, Ind., CA, $2,332,316. RESIDENCE HALL, WEST LAFAYETTE, IND. Purdue University, West Lafayette, Ind. Bids Dec. 16. CD 12/5.

▲ The Fluor Corp. Ltd., 2500 Atlantic St., Los Angeles, Calif., CA Est. $4,000,000. design and construct 12,000 bbl. per day SOVAFORMER (catalytic reformer) at refinery, EAST ST. LOUIS, ILL. Socony-Mobile, East St. Louis, Ill.

Tunnicliff Constr. Co., 3429 Miller St., Davenport, Iowa, CA $791,000. JUNIOR HIGH SCHOOL, GALESBURG, ILL. Bd. Educ., Galesburg, Ill.

Hoffman Co., Inc., 1519 N. Oneida St., Appleton, Wis., LB, $649,000 (7 bidders) STORE, APPLETON, WIS. J. R. Whitman, Zuelke Bldg., Appleton, Wis. J. C. Penney Co., lessee. Bids Dec. 30. CD 12/12, under Industrial Buildings.

WEST OF MISSISSIPPI

BUILDINGS—BA

Kan., Manhattan—SCHOOL—BA 2/24—Bd. Educ., Riley Co., high school, $800,000. F. O. Wolfenbarger & Assoc., Manhattan, archts. CD 12/17/54.

HEAVY CONSTRUCTION—LB & CA

▲ Kansas City Bridge Co., 928 Broadway, Kansas City, Mo. CA $3,028,955. substructure and superstructure new Fairfax Bridge and approach highways, PLATTE CITY, MO. Platte Co., Court House, Platte City, Mo. CD 12/22, under LB.

▲† Weitz Co., Inc., 406 Fleming Bldg., Des Moines, Iowa. LB $1,365,300, Schedule 1, modifications of wing hangars, Ellsworth Air Force Base, Inv. 25-066-56-27, RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 19. CD 12/21.

† Cleal T. Watts, Box 10293, Dallas, Tex., CA $503,227. east levee strengthening, Part II, Dallas Floodway, Trinity River, CIVENG-41-443-56-19, TEXAS. U. S. Eng., Box 1600, Fort Worth, Tex. Bids Jan. 5. CD 1/12, under LB.

† Northwestern Engineering Co., 1311 St. Joe St., Rapid City, S. D. CA $769,539. Phase II, roads, curbs, gutters, utilities, Glasgow Air Force Base, ENG-45-164-56-15, GLASGOW, MONT. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Dec. 13, awarded Dec. 19. CD 12/22, under LB.

▲COLORADO — State Hy. Dpt., 4201 E. Arkansas St., Denver,

Colo.—L. H. Kilgore, 7991 W. 6 Ave., Lakewood, Colo., CA $528,513, est. $530,000. plant mix asph. surf. 2.13 mi. Colo. Proj. S-SG-0077 (2), Arvada, Jefferson Co. Bids Jan. 4. CD 7/12/54;

Colo.—Baab Constr. Co. & C. V. Hill, Greeley, Colo., CA, $165,391. grading, structures, surf. State Hy. 66, Colo. Proj. S0054 (2), Greeley, Weld Co. Bids Jan. 5. CD 7/22;

Colo.—Lowdermilk Brothers, 1950 W. Dartmouth St., Engelwood, Colo., CA, $376,631, est. $361,703. plant mix asph. surf. 2.903 mi. State Hy. No. 4, Colo. Proj. BG 001-1 (13), Fruitvale and Clifton, Mesa Co. Bids Jan. 6. Grand total $1,070,535.

Thompson Pipe & Steel Co., 3001 Larimer St., Denver, Colo., CA, $569,350. pipe only for new water line southeast of AURORA, COLO. City, City Hall, 9859 E. 16 Ave., Aurora, Colo. Ken R. White, 1565 Marion St., Denver, Colo., engr. Bids Jan. 3, awarded Jan. 4.

BUILDINGS—LB & CA

▲ D'Arcy Leck Constr. Co., 2838 Stevens Ave., Minneapolis, Minn. CA Est. $3,000,000. general contract 1 story, 556x820 ft. OFFICE and WAREHOUSE, Excelsior Blvd., ST. LOUIS PARK, MINN. Coast to Coast Stores, A. C. Malamed, pres., 29 S.E. Main St., Minneapolis, Minn. Bids Jan. 12. CD 12/29.

Spencer Constr. Co., Spencer, Iowa, CA, $576,063, general contract, PLANT and OFFICE, NEVADA, IOWA. Reuben H. Donnelley Corp., 350 E. Cermak St., Chicago, Ill. Bids Dec. 1. CD 1/11, under LB.

▲ Collins Constr. Co., 3160 Fairfax Rd., Kansas City, Kan. CA Est. $2,000,000. expansion, modernization of home OFFICE facilities, 52x338 ft. new wing, Armour and Broadway, KANSAS CITY, MO. Kansas

(Continued on page 70)

Ride the new "660"

150 hp...8 forward speeds...does more work in less time!

The best way to judge a horse . . . or a car . . . or a grader, is to ride it. Get behind the wheel of a modern Adams "660" and see for yourself!

You'll find the big diesel engine starts readily in any kind of weather. Convenient and positive-acting power-controls raise, lower, revolve, or extend the 12-ft. blade to any desired position.

Pull the throttle and feel the surge of power. Set the blade for a deep cut, then watch the dirt boil over-and-out as the big tires take hold, and see how the machine hangs on to occasional over-loads. Note how Adams constant-mesh transmission provides easy gear shifting with no clash of spur gears.

Flexible speed range means more work per day

Eight forward speeds (1.4 to 25 mph) provide the necessary wide speed range to handle all operations at the fastest practical rate. Three additional "creeper speeds" (.23 to 1.82 mph) are optional. These "slow motion" speeds *gear* the grader to extra-low speeds — no need to slip the clutch. Make it easy to rip up rocky and rooty terrain with less shock to the grader. Creeper speeds are important, also, for accurate finishing in tight places. *No other grader offers this wide range of eleven forward operating speeds.* They mean *more* and better work done, in *less* time.

4 Reverse speeds (1.8 to 13 mph)

This wide range of backing speeds saves time on every cycle. You can back at 13 mph for a second cut. Or you have a good range of working speeds for grading or mixing on the reverse part of the cycle. This reverse range provides extra safety, extra accuracy for maneuvering.

Applying double-action hydraulic brakes to wheels also brakes transmission . . . gives greater safety in quick, sure stops, with less pedal action, less strain on machine.

Leaning front wheels balance the pull of the blade, give more accurate control on slopes, reduce stress, make steering easier, safer.

Engine rubber-mounted. No engine vibration is transmitted to grader to annoy and fatigue the operator. Means better operator satisfaction and efficiency.

See the "660" ADAMS before you buy any grader

Judge your next motor grader on the basis of *performance*. Ask your LeTourneau-Westinghouse Distributor to show you a "660" in action. Ride one of these machines. Find out for yourself why Adams motor graders do *more* work, in *less* time, at *lowest* cost.

Equipped with dozer blade, Adams grader backfills, push-loads scrapers, moves debris off right-of-way, fills in around culverts, and does "handy-man" jobs usually assigned to special tools. With V-type snow-plow "660" can buck heavy drifts for safer highway travel.

Operator on any Adams grader can move blade from ditch to bank-cutting position in less than a minute. Horizontally he can reach up to 7½' outside the wheels. Blade is fully reversible . . . note high 28" clearance under front-axle for straddling high windrows.

A size ADAMS for every need

Model 660 — 150 hp diesel, 27,730 lbs. A big grader for big jobs—high production on construction work.

Model 550 — 123 hp diesel, 23,500 lbs. Heavy-duty, all-purpose machine, outworks anything in its class.

Model 440 — 104 hp diesel, 21,500 lbs. A good producer on all average grading and maintenance work.

Model 330 — 80 hp diesel, 20,500 lbs. A good general-purpose machine with surprising capacity.

TraveLoader — high-speed, heavy-duty, self-propelled, belt-type loader. Loads trucks from windrows or stockpiles.

AG-3-G-b

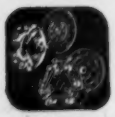
LeTourneau-WESTINGHOUSE Company

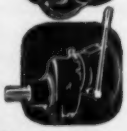
Peoria, Illinois

A Subsidiary of Westinghouse Air Brake Company

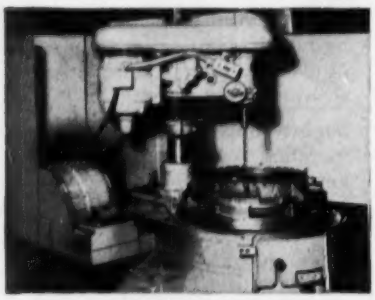
ROCKFORD

MEMO—
Clutch must have
accurate balance





All ROCKFORD clutch plates not only are carefully checked for accuracy of dimensions, but are inspected on an electronic balancing machine. Uniform operation, minimum wear,



SPRING

LOADED

less frequent adjustment and long life qualities of ROCKFORD CLUTCHES thus are protected during production.

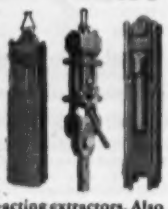
Let our engineers show you how ROCKFORD quality safeguards insure low maintenance for ROCKFORD clutch equipped machines.

ROCKFORD
Clutch Division
BORG-WARNER
313 Catherine St., Rockford, Ill.

CLUTCHES

McKIERNAN-TERRY

WIDE-RANGE LINE OF
PILE HAMMERS
AND
EXTRACTORS



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(Continued from page 68)

City Life Insurance Co., 3250 Broadway, Kansas City, Mo. Edward W. Tanner & Assoc., 310 Ward Parkway, Kansas City, Mo., archts. Awarded Jan. 17.

▲† **Singmaster-Breyer, Inc.**, 420 Lexington Ave., New York, N. Y. CA $1,262,800. nitric acid mfg. PLANT incl. designing, fabrication, erection all bldgs., mechanical and electric facilities etc. (Sub-contract No. WS 20) for Atomic Energy Comn., WELDON SPRINGS, MO. Fruin-Colnon Contg. Co. and Utah Constr. Co., joint venturers, St. Louis area Proj. Contr. AT (40-1), 1966, P. O. Box 522, St. Charles, Mo. Bids Dec. 22, awarded Jan. 17. CD 1/4, under LB.

C. A. Doolittle Jr. Constr. Co., 331 N. Waco St., Wichita, Kan. LB $553,300. HEALTH CENTER, WICHITA, KAN. Sedgwick Co., 1629 Universal St., Wichita, Kan. Bids Jan. 10. CD 12/14.

C. E. Mitchell & Sons, 308 Fourth Ave. S., Great Falls, Mont. LB $514,900. (7 bidders) DIAL EXCHANGE BLDG. addn., remodeling, GREAT FALLS, MONT. Mountain States Telephone & Telegraph Co., 401 First Ave. N., Great Falls, Mont., Morrison-Maierle, Inc., 910 Helena Ave., Helena, Mont., engrs.

Robbins Constr. Co., P. O. Box 1166, Denver, Colo., CA, $654,000, general contract 1 and 2 story, brick Slavens Elementary SCHOOL, DENVER, COLO. School Dist. No. 1, 414 14 St., Denver, Colo. Bids Dec. 14, awarded Dec. 23. CD 12/8.

F. J. Kirchhof Constr. Co., 700 Larimer St., Denver, Colo., CA, $764,184, est. $500,000, 1 story, full bsmnt. CHURCH Addn., DENVER, COLO. Montview Boulevard Presbyterian Church, Montview Blvd. and Dahlia St., Denver, Colo. Bids Dec. 16, awarded Jan. 6. CD 12/23, under LB.

▲ **A. A. & E. B. Jones**, 1050 S. Jaxon St., Denver, Colo., LB, $1,576,000 general contract Baker Junior HIGH SCHOOL, DENVER, COLO. School Dist. No. 1, 414 14 St., Denver, Colo. W. Gordon Jamieson, 810 12 St., Denver, Colo., engr. Bids Jan. 11. CD 12/8.

▲ **Ebasco Services, Inc.**, Platte River Dr., Denver, Colo., CA, $4,500,000. STEAM ELECTRIC GENERATING STATION (first unit), PALISADES, COLO. Public Services Co. of Colorado, 5525 E. 38 St., Denver, Colo.

FAR WEST

HEAVY CONSTRUCTION—LB & CA

▲ **Waterfall Constr. Co.**, 1685 Wall St., Ogden, Utah, LB $560,582, outfall sewer lines; LB $321,384, relief sewer line, OGDEN, UTAH, Central Weber Sewer & Imprvt. Dist., Doren Boyce, chn., Ogden, Utah. Bids Jan. 19, CD 12/29;
Davis & Butler, 422 Dooly Bldg., Salt Lake City, Utah, LB $214,675, sewerage pumping plant, (Ogden, Utah).

▲† **McAtee & Heathe, Inc.**, E 3527 Trent St., Spokane, Wash., CA $1,922,558, runway, taxiway pavement strengthening, Larson Air Force Base, ENG-45-164-56-16, MOSES LAKE, WASH. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Dec. 14, awarded Dec. 21. CD 12/19, under LB.

▲† **Stolte, Inc.**, 8451 San Leandro St., Oakland, Calif., LB $1,173,807, est. $1,223,720. (6 bidders) 3 airmen dormitories, shop, organizational special purpose flight simulator training bldg., McClellan Air Force Base, ENG-04-167-56-32, SACRAMENTO, CALIF. U. S. Eng., 1209 B St., Sacramento, Calif. Bids Jan. 19. CD 1/6.

▲† **Euclid Constr. Co., Inc.**, Phoenix, Ariz., LB, $1,012,097, Sch. 2, Palo Verde Diversion levee sys., Palo Verde Proj., Spec. DC 4551, ARIZONA-CALIFORNIA, Bureau Reclamation, Dpt. Interior, Blythe, Calif. Bids Jan. 12. CD 1/5, under LB.

▲† **W. E. Kier Constr. Co.**, 2323 E. Rosecrans St., El Segundo, Calif., CA $2,009,760. Sch. 1, Palo Verde diversion dam, Palo Verle Diversion Proj., Spec. DC 4551, ARIZONA and CALIFORNIA, Bureau Reclamation, Dpt. Interior, Blythe, Calif. Bids Dec. 6, awarded Jan. 9. CD 12/14, under LB.

▲ **H. B. Nicholson**, 880 E. Colorado St., Pasadena, Calif., LB, $1,344,350. (3 bidders) extension to 5 pump houses, Colorado River Aqueduct, San Bernardino and Riverside, LOS ANGELES, CALIF. Metropolitan Water Dist. of Southern California, 306 W. 3 St., Los Angeles, Calif. Bids Jan. 18. CD 12/29.

BUILDINGS—LB & CA

† **Sacramento Roofing & Insulation Co., Inc.**, 418 17 St., Sacramento, Calif. and **C. E. Swift Roofing Co.**, 2241 E. Miner Ave., Stockton, Calif., CA Est. $539,735, re-roofing 8 WAREHOUSE bldgs., complete and 3 sections of Bldg. 349, incl. drainage appurtenances, IFB QM-42-015-56-52-B, Utah General Depot, OGDEN, UTAH. Purchasing Division, Utah General Depot, U. S. Army, Ogden, Utah. CD 12/3/51.

▲ **Kitchell-Phillips Contractors**, 1706 W. Buchanan St., Phoenix, Ariz., CA $1,000,000. SHOPPING CENTER, PHOENIX, ARIZ. Park Central Development Co., 3418 N. 7 Ave., Phoenix, Ariz. Welton Beckett, 5657 Wilshire Blvd., Los Angeles, Calif., archts. Awarded Jan. 9.

▲ **Nylin P. Hurd**, 1317 Santiago Ave., Santa Ana, Calif., LB $2,000,000, HIGH SCHOOL, COVINA, CALIF. Covina High School Dist., Covina, Calif. Bids Jan. 17. CD 1/5.

Wm. C. Crowell Co., 170 E. California St., Pasadena, Calif., CA $518,200, Murphy Ranch SCHOOL, EAST WHITTIER, CALIF. East Whittier School Dist., 1453 E. Whittier Blvd., East Whittier, Calif. Bids Dec. 20, awarded Jan. 12. CD 1/3, under LB.

(Continued on page 72)

Four-wheel drive, and tires 2' wide, give Tournatractor ample traction to make full use of its 208 hp.

Root-Rakes

Here's what high-speed on rubber can do for you

Tournatractor, with 19 mph forward speed and 8 mph reverse speed, can do many tractor jobs twice as fast as a crawler-tractor.

Drives anywhere

Because of its big low-pressure tires, Tournatractor drives anywhere under its own power. Job-to-job moves can be made across pavement, over curbs, sidewalks, and railroad tracks. On long moves it saves time, bother, and expense of locating a trailer, moving in extra manpower and transport equipment, loading and unloading.

Reduces maintenance

Tournatractor greatly reduces maintenance and service costs by eliminating some 500 wearing parts that grind through dirt in a crawler-track assembly. Eliminated also is the friction caused by grit-grinding in the track assembly which reduces rated horsepower.

Easy to operate

With simple easy-to-handle power controls, and comfortable, adjustable, foam-rubber seat, operator on Tournatractor works comfortably, with less fatigue, maneuvers faster, gets more work done, in less time, with less effort.

High-speed performance

Constant-mesh transmission eliminates delays in changing gears . . . saves vital momentum . . . gives any gear-ratio instantly. As a pusher or dozer, Tournatractor high-speed reverse (up to 8 mph) is a very important time saver.

Versatility helps get more work done

Wide range of attachments increase Tournatractor range of applications, extend length of work season. Since Tournatractor is a "traveling man", these optional attachments are especially important in finding profitable jobs in a wide range of big or small industries and in any climate or area selected.

a. Equipped with Bulldozer or Angledozer blade, Tournatractor push-loads scrapers, moves short-haul dirt, cleans up at shovel, loads and spreads on dump, digs drainage ditches, maintains haul roads, clears land, terraces, digs stock piles, grades roads. Does all these jobs fast.

b. Root-Rake makes 208 hp Tournatractor a powerful tool for clearing brush, grubbing roots, raking out boulders, etc. The 11'4" wide x 4'6" high rake has 10 teeth of 4" high-grade steel, to resist shock, do heavy work.

c. V-type snow plow mounts on same A-frame as dozer . . . clears 12'4" width, 6½' height. Can mean earnings for you during winter season when most earth-moving equipment is idle.

Find out for yourself how high-speed C Tournatractor can take over a major percentage of your tractor work, and save you money. Ask for owner-verified job reports on work similar to yours.

V-type snow plows

Tournatractor, Angledozer—Trademark Reg. U.S. Pat. Off. T-954-G-b

LeTourneau-WESTINGHOUSE Company
Peoria, Illinois
A Subsidiary of Westinghouse Air Brake Company

Darex Diary

No. 9 of a series

by Henry L. Kennedy

Member, American Concrete Institute

Manager, Construction Products
Dewey & Almy Chemical Company

*"The fifth ingredient in concrete"
*Communications in today's ready mix plants
*DARACONE successfully protects masonry walls at Monticello

TODAY, with its advantages universally known, air entrainment in concrete has become the rule, rather than the exception. Accordingly, DAREX AEA has truly earned the right to be considered "the fifth ingredient in concrete," a term that we coined for this air entraining agent some years ago.

As the "fifth ingredient," DAREX AEA is entitled to the same care in proportioning as the cement, aggregates and water. It is important that the quantity introduced into the concrete-making operation should be measured by some dependable and accurate method. Secondly, the mixed concrete should be tested to insure that the optimum volume of air is present. For too little air means that the full advantages of air entrainment cannot be realized; while too much air can have undesirable effects on the strength properties of the concrete. In short, determination of actual air content has attained the status of a full-time control test, along with such other tests as consistency, compressive strength, unit weight, etc.

Wide and growing interest has sprung up in connection with this measuring and testing equipment. Consequently, at the National Ready Mixed Concrete Association convention in Chicago, February 13-16, Dewey and Almy will exhibit an operating display of DAREX AEA dispensers as well as several popular air measuring devices.

We'd be delighted to have you stop by, see the exhibit (Booths 101, 102), and talk concrete. Our own technical staff will be present to answer your questions, as will several of our distributors from all parts of the country.

* * * * *

The efficiency of intra-company communications can be a deciding factor in the ability of any business to serve its customers well. Many of today's ready-mix plants provide excellent examples of smoothly-functioning communications operations.

Orders are received by telephone at a control center. They are relayed immediately to the batch operator by squawk box or teletype. Contact is maintained with truck units and field personnel through two-way radio units, in order to facilitate dispatching and improve routing efficiency.

In one instance, a large producer installed a TV camera and receiver. The camera picks up the ready mix trucks as they enter the yard, and the picture appears on a receiver screen conveniently located in front of the batcher. Thus, with the teletype order for concrete already received through central communication, the batcher is able to crank out six cubic yards of custom-ordered concrete and have it ready for the truck to which it is consigned by the time the truck enters the plant. The driver is advised by radio of his destination — given the help needed as to the most efficient route, where to avoid heavy traffic, detours, etc. Consequently, the truck unit stops only long enough to load and away it goes. Its next trip will probably be charted before the driver starts back.

* * * * *

Over two years ago, Daracone, our silicone base water repellent, was applied to the exterior masonry walls of the Thomas Jefferson home at Monticello, Virginia. Recently, we learned that the architect, Milton L. Grigg, F.A.I.A., of Charlottesville, Virginia, is very happy with the performance of Daracone on this famous old building and has, as a result, been specifying Daracone in other work of his own and also recommending it to other architects. Daracone was originally recommended by Stone and Webster Engineering Corporation.

DEWEY and ALMY CHEMICAL COMPANY

DIVISION OF W. R. GRACE & CO., Cambridge 40, Mass.

Offices or Subsidiaries in principal U. S. cities, and in Buenos Aires, Copenhagen, Hamburg, London, Melbourne, Milan, Montevideo, Montreal, Naples, Paris, São Paulo, Wellington

(Continued from page 70)

John Goodwin Constr. Co., 2285 Newton St., San Diego, Calif., CA **$660,780**, est. $600,000 (4 bidders) Fallbrook High SCHOOL, FALLBROOK, CALIF. Fallbrook Union High School Dist., Fallbrook, Calif. Bids Jan. 12. CD 12/16.

Cashmere Building Co., Bismark Building Co., Buffalo Building Co., 8906 W. Olympic Blvd., Los Angeles, Calif., Owner Builds, **$926,500.** 109 frame, stucco DWELLINGS, Potter St. and Piuma Ave., etc., NORWALK, CALIF.

Family Land Co., 2918 W. Compton Blvd., Gardena, Calif., CA **$870,000**, 100 frame, stucco DWELLINGS, Mariand St. and Sandra Ave., PUENTE, CALIF. Ionia Constr. Co., Hyla Constr. Co., Glow Constr. Co., 2918 W. Compton Blvd., Gardena, Calif.

▲ **Ed. Krist**, 8640 E. Center St., Paramount, Calif., Owner Builds. **$1,168,200.** 177 frame, stucco DWELLINGS, Sandlewood and Winton Sts., PUENTE, CALIF.

Beckner Constr. Co., 2650 River Ave., South San Gabriel, Calif., CA, **$519,900** (10 bidders) Vanwig SCHOOL, PUENTE, CALIF. Bassett School Dist., 546 N. Vienland Ave., Puente, Calif. Bids Jan. 12.

E. F. Gladding, 9178 Olive St., Fontana, Calif., CA **$624,000.** Redlands High SCHOOL addn. REDLANDS, CALIF. Redlands High School Dist., Redlands, Calif. Bids Jan. 10, awarded Jan. 12. CD 1/19, under LB.

CANADA

BUILDINGS—BA

▲ **Alta., Edmonton**—CLUBS—BA 2/8—Defence Contr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. 2 Junior Ranks Clubs, barrack block, return stores bldg., two ranges, outside service, Griesbach Army Barracks. $1,000,000. Plans deposit $100.

Ont., Cooksville — HOSPITAL — BA 2/10 — Chester C. Woods, 2842 Bloor St. W., Toronto, 4 story, bsmnt., 150x200 ft., rein.-con., brick hospital for South Peel Hospital Bd., Port Credit, Ont. $800,000. Ralph C. Manning, 745 Mount Pleasant Rd., Toronto, engr. CD 12/27.

N. B., Fredericton—PHYSICAL TRAINING—BA 2/21—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. physical training bldg. outside services, Army Camp, $900,000. Plans deposit $100.

▲ **Ont., Kingston**—MILITARY HOSPITAL—BA 2/21—Defence Construction (1951) Ltd., 56 Lyon St., Ottawa, 125-bed, 4 story, 50x281 ft. and 50x136 ft. T-shaped, rein.-con. military hospital. $2,000,000. Plans deposit $100. Shore & Moffat, 79 Queen St. E., Toronto, archts. CD 11/9.

BUILDINGS—SLC

▲ **Ont., Toronto** — APARTMENT — Sahara Investments Ltd., 795 Vaughn Rd., soon lets contract 103-suite, 9 story, bsmnt., 70x168 ft., rein.-con., steel, brick, block apartment, 795 Vaughn Rd. $1,000,000. E. I. Richmond, 455 Spadina Ave., archt.

Que., Montreal—APARTMENT—McGregor Towers, c/o Greenspoon, Freedlander & Dunne, archts., 4151 Sherbrooke St. W., soon lets contract 72-suite, 10 story, 2 bsmnt. levels, 75x107 ft., brick, block, stone trim apartment with garage in bsmnt. $750,000. Irving S. Backler, 5253 Decarie Blvd., engr.

▲ **Que., Montreal**—APARTMENT—Radpath Apartments, c/o Greenspoon, Freedlander & Dunne, archts., 4151 Sherbrooke St. W., soon lets contract 63-suite, 12 story, 2 bsmnt. levels, 86x140 ft., rein.-con., block, brick apartment. $1,500,000. Pierre M. D'Allegmagne, 3180 Van Horne Ave., engr.

Que., Montreal—SYNAGOGUE—Temple Emmanu-El, c/o Greenspoon, Freedlander & Dunne, archts., 4151 Sherbrooke St. W., soon lets contract 1 and 3 story, bsmnt., 97x221 ft., rein.-con., brick, stone trim synagogue exten. $500,000. I. Kursbatt, 1117 St. Catherine St. W., engr. CD 12/1.

HEAVY CONSTRUCTION—LB & CA

▲ **Frank R. Lount & Son**, 1 Rowand Ave., St. James, Man., LB, **$1,000,000.** PARKING GARAGE, for hotel, WINNIPEG, MAN. The Marborough Hotel, Smith St., Winnipeg, Man. Libling, Michener & Diamond, 138 Portage Ave. E., Winnipeg, Man., archts.

▲ **Jay Mar Constr. Ltd.**, 547 St. Roch St., Montreal, Que., Owner Builds, **$1,000,000.** 75-80-unit HOUSING program, Ville St. Michel, MONTREAL, QUE. CD 1/20.

Foundation Co. of Canada Ltd., 1220 Bay St., Toronto, Ont., LB, **$801,408** (8 bidders) interchange-overpass at Dundas St. W. and Royal York Rd., TORONTO, ONT. Municipality of Metropolitan Toronto, 67 Adelaide St. E., Toronto, Ont. Bids Jan. 16. CD 12/14.

BUILDINGS—LB & CA

▲ **Burns & Dutton Concrete & Constr. Co. Ltd.**, 5440 1 St. S.W., Calgary, Alta., CA Est. **$3,500,000** (10 bidders) 6 story, bsmnt., 110,000 sq. ft. DEPARTMENT STORE addn., CALGARY, ALTA. Hudson Bay Co., Portage and Memorial Aves., Winnipeg, Man. Bids Jan. 9, awarded Jan. 10. CD 1/5.

▲ **Dravo of Canada Ltd.**, 159 Bay St., Toronto, Ont., CA Total Est. **$6,500,000.** shaft only for URANIUM MINE, BANCROFT, ONT. Faraday Uranium Mines Ltd., Room 1606, 100 Adelaide St. W., Toronto, Ont. Kilborn Eng. Co., 36 Park Lawn Rd., Toronto, Ont., engr. Awarded Jan. 12.

▲ **Lummus Co. Canada Ltd.**, 455 Craig St. W., Montreal, Que., CA Est. **$4,000,000**, design and construct third catalytic REFORMING UNIT to produce 10,000 bbls. per day straight-run naptha at refinery, CLARKSON, ONT. British American Oil Co., 800 Bay St., Toronto, Ont.

Eastwood Constr. Co. Ltd., Box 421, Peterborough, Ont., CA $600,000 (6 bidders) 2 story Kenner COLLEGIATE addn., PETERBOROUGH, ONT. Peterborough Bd. Educ., City Hall, Peterborough, Ont. Bids Dec. 21, awarded Jan. 11. CD 12/1.

▲ **Ecclestone Construction Ltd.**, 525 Riverside Ave., Riverside, Ont., CA Est. $5,000,000. SHOPPING CENTER, Huron Line and Tecumseh Rd., WINDSOR, ONT. Ambassador Shopping Center, c/o Duncan McIntosh, archt.-engr., 36 James St. S., Hamilton, Ont. Awarded Jan. 16.

ALASKA

HEAVY CONSTRUCTION—LB & CA

† **Pacific Alaska Contractors**, 1515 Center St., Tacoma, Wash., CA $671,421. four underground fuel storage tanks, Inv. 56-9, Elmendorf Air Force Base, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Dec. 9. CD 12/21, under CA.

LATIN AMERICA

HEAVY CONSTRUCTION—LB & CA

▲† **NICARAGUA**—Bureau P. Rds., Dpt. Commerce, Office of the Inter-American Highway Office, General Services Bldg., Wash. 25, D. C., U.S.A.,

Vinnell Co., Inc., 1145 Westminister St., Alhambra, Calif., U.S.A. LB $1,802,600. Rama Rd. Proj. R-3A, grading, drainage, 4 bridges, etc. from Muhan, approx. 23 mi. east of Santo Tomas and extend easterly toward Rama, approx. 15 mi. Bids Jan. 19. CD 12/19.

▲ **Whimpey & Co. Ltd.**, London, England, CA Est. $6,100,000. rebuild harbor at Salaverry, port for Trujjilo, PERU. Government of Peru, Lima, Peru.

FOREIGN

BUILDINGS—BA

Greece—HOUSING—BA 2/29—The Building Association "New City", 4 Voulie St., Athens, finance and construct approx. 300 houses at the Kokkinara area, Kifissia, Athens.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Ga., Roswell**—City Comn., City Hall, water main extensions, $2,000,000.

▲ **Ohio**—Lake Erie Watershed Conservation Foundation of Cleveland, c/o Stanley Eng. Co., consult. engr., Muscatine, Iowa, having feasibility survey made for using Lake Erie water for 4,000 sq. mi. area in Cuyahoga, Geauga, Ashtabula, Portage, Summit and Lake Counties.

▲ **Ont., Hamilton**—City, City Hall, filtration plant expansion, $2,500,000. W. L. McFaul, city engr.

SEWERS, WASTE DISPOSAL

▲ **Mich., Muskegon**—City, A. J. Leutscher, clk., City Hall, storm sewers, $1,750,000, George Clark, city engr. CD 11/29/50.

▲ **Wash., Everett**—City, City Hall, 2 disposal plants with necessary trunk lines, $4,000,000. CD 10/23/52.

STREETS AND ROADS

▲ **Conn., Hartford**—City, City Hall, wid'n. Albany Ave. between Garden St. and Homestead Ave., $630,000; wid'n. Asylum Ave. between Cogswell and Summer Sts., $167,000; extending Bloomfield Ave., $120,000; wid'n. Main St. from Capen St. to Windsor Town Line $1,160,000; wid'n. Market St. Talcott and Front Sts., $77,000; wid'n. of Prospect St., between Sheldon St. to Charter Oak Ave., $190,000; extending Tower Ave. to Bloomfield Ave.; wid'n. Tower Ave. from Blue Hills Ave. to Granby St. $380,000; constr. various park roads and walks, $100,000.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany,

Westchester Co.—Rte. N. Y. 125 relocation from south city line northerly along abandoned railroad R.O.W. to vicinity of Fourth St. then on new location west of Franklin Ave. to Third St. 1.2 mi., $1,920,000.

from Third St. northeasterly on new location to jct. with cross-Westchester arterial at N.Y., N.H. & H.R.R. then coincidental easterly on new location to abandoned R.R. R.O.W. then generally northerly along R.R. R.O.W. to separation arterial in Wilson Woods Park 1.1 mi., $4,495,000.

from Wilson Woods Park generally northerly along abandoned R.R. R.O.W. to north city line 0.9 mi., $1,265,000.

Cross-Westchester Arterial from west city line easterly on new viaduct continuing along Grove St. to N.Y., N.H. and H.R.R. then easterly on deck over R.R. tracks to Lincoln Ave. (Scott's Bridge) 0.5 mi., $3,580,000.

from Lincoln Ave. continuing easterly on R.R. track decking to First Ave. 0.6 mi., $3,940,000.

from First Ave. easterly on new location to jct. with Rte. N.Y. 125 relocation, then coincidental to Wilson Woods Park, then easterly on abandoned R.R. R.O.W. to east city line 0.2 mi., $1,370,000. all arterial routes within the city of Mount Vernon.

Rte. N.Y. 125 relocation from south city line southerly on abandoned railroad R.O.W. to Boston Post Rd. (U.S. 1) in Bronx, 0.4 mi., $3,800,000.

from north city line northerly on abandoned R.R. R.O.W. to Memorial Hy., exten. in New Rochelle 0.4 mi., $640,000.

Cross-Westchester Arterial from Yonkers Ave. east of Kimball Ave. easterly on new location and new viaduct to Mount Vernon west city line 0.3 mi., $690,000.

from east city line easterly on abandoned R.R. R.O.W. through Pelham to New Rochelle east-west arterial connection 0.5 mi., $800,000, latter 4 projects are hy. connections outside the city of Mount Vernon.

EARTHWORK, WATERWAYS

▲† **California**—U. S. Eng., 1209 8 St., Sacramento, dredging Sacramento Deep Water Channel, lower end of Yolo Bypass, Soleano Co. $1,750,000. Bids in February. CD 4/21/49.

▲ **Texas**—Lufkin-Nacogdoches Water Imprvt. Dist. No. 1, c/o H. J. Shands, Lufkin, voted bonds Jan. 10, dam and reservoir, Stryker Creek, near New Salem to supply domestic and industrial water for towns of Lufkin, Nacogdoches and Henderson, $2,400,000. CD 11/30.

▲ **Tex., San Antonio**—San Antonio River Auth., c/o Frank Drought, 342 W. Woodlawn St., voted bonds Jan. 10, widen, straighten portion of San Antonio River Channel. $10,000,000. CD 10/12.

AIRPORTS

▲† **Ala., Ozark**—MAINTENANCE BLDG., etc.—U. S. Army, Ozark Army Air Field, Ozark, air maintenance and operations bldg., auxiliary field for helicopter school. $1,467,670.

▲† **Md., Middle River**—AIR NATIONAL GUARD FACILITIES—U.S. Eng., P. O. Box 1715, Baltimore, Zone 3, Air National Guard facilities at Glenn L. Martin Airport, $1,000,000.

▲ **Mich., Grand Rapids**—ADMINISTRATION BLDG., etc.—Bd. Supervs. Kent Co., James Mol, chn., Grand Rapids, plans by J. & G. Daverman, 924 Grandville St., S. W., County Airport 4 year Program; administration bldg., $1,500,000; taxiways, $150,000; resurf. NE/SW Runway, $150,000; aprons area, $225,000; N/S Runway, $500,000; cargo-main bldg., $500,000; hangars $86,000; fencing $60,000. CD 5/27.

▲ **O., Akron**—AIRPORT IMPRVS.—Comrs. Summit and Stark Counties, Court House, Akron, plans by Konarski, Chambers & Stafford, 844 W. Market St., Akron-Canton airport imprvs., terminal bldg. $1,368,000. Landrum & Brown, 111 E. 4 St., Cincinnati, consult. engrs. CD 9/23.

▲† **Tex., San Marcos**—HOUSING—Dpt. Air Force, The Pentagon, Wash. 15, D. C., 215 military personnel housing units, Gary Air Force Base. $1,720,000. CD 2/15/54.

PUBLIC BUILDINGS

▲ **Ariz., Yuma**—BARRACKS, etc.—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., plans by Schoier, Sakeller & Fuller, 2566 N. Campbell Ave., Tucson, barracks and officers' quarters, Yuma Test Station. $1,300,000. CD 12/11/52.

▲ **Calif., Los Angeles** — SCHOOLS — Los Angeles Bd. Educ., 1425 S. San Pedro St., plans by Orr, Strange & Inslee, 3142 Wilshire Blvd., Olive Vista Junior High School, Borden Ave., $2,000,000; plans by Walker, Kalionzes & Klingerman, 488 S. San Vicente Blvd., Kiltridge St. School, $475,000. CD 4/8.

▲ **Conn., Storrs**—FINE ARTS, etc.—State of Conn., State Office Bldg., Hartford, Fine Arts, Social Science and Humanities Bldg., $3,632,817; Poultry Science Bldg., $1,024,843; Engineering Bldg., $1,313,000; Shipping and Receiving Warehouse Center, 615,000; Junior and Senior High School Unit, $1,600,000. CD 11/24/53.

▲ **Del., New Castle** — SCHOOLS — Rosehill-Minquadale School Dist., New Castle, high school $1,000,000; plans by E. William Martin, 830 West St., Wilmington, Colwyck School addns., alterations $350,000; elementary school, Collins Park Section, $800,000.

▲† **D. C., Wash.**—DEPARTMENT OF STATE—General Services Admin., General Services Bldg., Wash., D. C., plans by Graham, Anderson, Probst & White Inc., 80 E. Jackson St., Chicago, Ill., Harley, Ellington & Day, Inc., 153 E. Elizabeth St., Detroit, Mich., and A. R. Clas, Wyatt Bldg., Wash., D. C., Department of State Bldg., between 21, 23 and C and E Sts. N. W., $49,715,000. CD 10/26/45.

▲ **Iowa, Council Bluffs**—SCHOOLS—Bd. Educ., bond election Feb. 14, elementary and Junior High Schools. $1,250,000. CD 12/5.

▲† **Ky., Fort Knox**—HOUSING—U. S. Eng., 830 W. Broadway, Louisville, addnl. brick housing, 2,040 units, $26,000,000. Bids in Summer. CD 8/30.

▲ **Mass., Shrewsbury**—SCHOOL—Town, Supt. Schools, Church Rd., plans by L. W. Briggs Assoc., Inc., 90 Park Ave., Worcester, Junior-Senior High School, Oak St. $2,658,500. CD 4/20/54.

▲ **Mich., Big Rapids**—CLASSROOM BLDG., etc.—State, Ferris Institute, Victor Spathelf, pres., Big Rapids, plans by Roger Allen & Assoc., 1126 McKay tower, Grand Rapids, classroom bldg., $1,500,000; physical education unit, $1,300,000, Ferris Institute. CD 12/13/54.

▲ **Mo., Affton (St. Louis 23 P. O.)**—SCHOOL—Affton School Dist., Bd. Educ., Charles J. Mesnier, supt. Schools, 8520 MacKenzie Rd., Zone 23, voted $1,200,000 bonds Jan. 10, elementary school, Reavis Elementary School addn., athletic field development at Affton Senior High School.

▲ **Mo., Ferguson-Florissant**—SCHOOLS—Ferguson-Florissant School Dist. R-2, Bd. Educ., Virgil C. McCluer, supt, Schools, 200 Church St., Ferguson, Zone 21,

(Continued on page 75)

Darex
products at work

DARACONE
stops mortar deterioration at historic Monticello

Consultants: Stone and Webster Engineering Corporation
Architect: Milton L. Griggs F.A.I.A.

The mortar between the bricks in the historic Thomas Jefferson home at Monticello, built in 1770, started to deteriorate a few years ago. This original mortar had been made with local ingredients . . . and it was found that an exact match of the mortar could not be made today.

In order to preserve the character of this historic building, DARACONE silicone-type water repellent was applied to all of the masonry a little more than two years ago. There has been no trace of further deterioration of the mortar since that time.

DARACONE is a balanced formula of a special silicone resin and solvent. Again and again it produces excellent results on applications where other water repellents have failed.

Write today for a copy of our prepared DARACONE specifications and helpful data about tests you can make to insure the lasting protection of masonry walls.

Other Dewey and Almy Products for the Concrete Industry

DAREX AEA — the world's leading air entraining agent

DARALITE — air entraining agent for use with lightweight aggregates

DARASEAL — premium quality concrete curing compound

DARAWELD — water-repellent for the interior of below-grade surfaces

GRINDING AIDS — for use in the manufacture of cement

DEWEY and ALMY
Chemical Company
DIVISION OF W. R. GRACE & CO.
Cambridge 40, Massachusetts

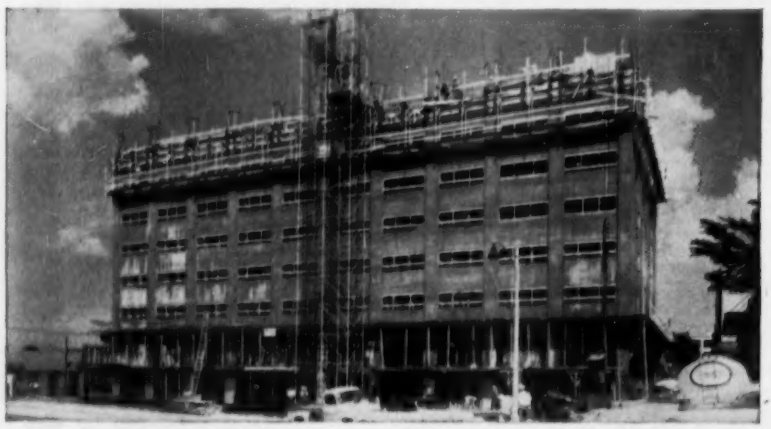
THREE 50-MAN CREWS, working around the clock, placed the reinforcing, placed and tamped concrete, set windows and doors.

Apartment building poured with slip-forms in 114 hours

THE SLIP-FORM METHOD so successfully used on silos and grain elevators worked equally well on this 10-story apartment building. Because the basement and two lower floors are designed for open parking, they were built by conventional methods. The exterior walls, corridor walls and partition walls for the upper 8 stories were then erected by one continuous pour to slip-forms, completed in 113 hours and 55 minutes. The roof slab was poured next and the floors were then poured from the top down.

A continuous 150′ x 80′ platform supported the wood slip-forms, which were 3′6″ deep and of 7½″ inner width. Hydraulic jacks raised platform and forms at a rate that began at 9″ and eventually reached almost 30″ an hour.

Success required the accurately scheduled and uninterrupted delivery of 2100 cubic yards of concrete having the closely controlled strength and slump needed to support successive layers while still damp enough to allow all forms to slip under jacking pressure. This requirement was met by using ready mixed concrete, processed in truck mixers of certified design, capacity, mixing speed and water control accuracy.



Madison Towers, Memphis, Tennessee. John H. Doggett, architect; S. S. Kenworthy, engineer; Southern Builders, Inc., contractor.

Truck mixers delivered to 1½-yard bucket in double well elevator.

You have a right to insist on this Rating Plate. It certifies compliance with the high industrial standards maintained for your protection by the Truck Mixer Manufacturers Bureau.

BLAW-KNOX CONSTRUCTION EQUIPMENT DIV.
Mattoon, Ill.

CHAIN BELT COMPANY
Milwaukee, Wis. and Los Angeles, Calif.

CHALLENGE MANUFACTURING CO.
Los Angeles, Calif.

CONCRETE TRANSPORT MIXER CO.
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CONSTRUCTION MACHINERY CO.
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THE JAEGER MACHINE COMPANY
Columbus, Ohio

THE T. L. SMITH COMPANY
Milwaukee, Wis.

WILLARD CONCRETE MACHINERY CO., LTD.
Lynwood, Calif.

WORTHINGTON CORPORATION
Plainfield, N. J.

(Continued from page 73)

voted $1,800,000 bonds Jan. 12, schools, school addns., in Ferguson and Florissant, Charles W. Lorenz, 700 N. Ballas Rd., Rte. 13, Box 1378, Kirkwood, Zone 22, archt. CD 1/6.

▲ **Mo., Riverview Gardens (St. Louis 15 P. O.)**—SCHOOL—School Dist. of Riverview Gardens, E. M. Lemasters, supt. Schools, 587 Chambers Rd., Zone 15, voted $1,830,000 bonds Jan. 10, 2 elementary schools, high school addns., CD 7/26/54.

▲ **Neb., Omaha**—STUDENT UNION, etc.—University of Omaha, Omaha, plans by John Latenser & Sons, 1307 Farnam St., combination student union bldg. and dormitory, $1,750,000. CD 10/26.

▲ **N. Y., Cheektowaga**—SCHOOL—Maryvale School Bd., Samuel R. Bennett, principal, $2,345,000 bond election Feb. 7, Junior High School.

▲ **N. Y., Middletown** — HOME — Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, motel-type home for senile aged persons at Middletown State Hospital, $1,000,000. To go ahead in the Spring of 1956.

▲ **N. Y., New York**—SCHOOL—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, plans by Michael Radoslovich, c/o owner, 3 story Public School No. 146, Eagle Ave. southeast corner of 163 St., Proj. E-362, $2,000,000.

▲ **N. Y., West Seneca**—SCHOOL—State Dpt. Mental Hygiene, The Gov. Alfred E. Smith State Office Bldg., Albany, school for retarded children, $30,000,000.

▲ **O., Massillon**—SCHOOL—Perry Local Bd. Educ., Massillon, bond election May 8, schools. $1,140,000. CD 12/20.

▲ **O., Van Wert**—HOSPITAL—Comrs. Van Wert Co., Court House, bond election May 8, 70-bed county hospital, north of city reservoir, $1,575,000. CD 1/17/55, under Commercial Buildings.

▲ **Pa., Newtown Square**—SCHOOL—Marple Newtown Joint School Bd., plans by Baader Young Schultz, 1500 Walnut St., Phila., Marple Newtown Joint Senior High School, $1,250,000, Chester I. Duncan, 225 S. 15 St., Phila., consult. engr. CD 2/10.

▲ **Tex., Baytown**—HOUSING—Baytown Housing Auth., Baytown, 150 housing units. $1,500,000.

▲ **Wash., Moses Lake**—SCHOOLS—School District 161, Moses Lake, high school $1,000,000; Junior High School $500,000; 4 grade schools each $400,000.

▲ **N. S., Sheet Harbor**—POWER PLANT—Nova Scotia Power Comn., Province Bldg., Halifax, steam turbine power plant, $4,500,000.

▲ **Ont., Toronto**—WOMEN'S—City, City Hall, revised plans by Page & Steele, 72 St. Claire Ave. W., 2 story, part bsmnt., 170x180 ft., rein.-con., 1 story, 240x308 ft. annex women's bldg. at Canadian National Exhibition. $3,500,000. Hooper & Yolles, 111 Richmond St. W., consult. engrs. (Correction-status.) CD 9/13, under CA.

COMMERCIAL BUILDINGS

▲ **Calif., Los Angeles**—DWELLINGS—Brouley Building Co., 1213 S. La Brea Ave., plans by Wm. M. Bray, 962 N. La Cienega Blvd., 104 frame, stucco dwellings, E. Washington Blvd. $1,000,000.

▲ **Calif., Modesto**—HOME—J. H. Rodda & R. W. Moles, 386 Race St., San Jose, 800-900 home subdivision, 175-acre site. $12,000,000.

▲ **Calif., Pico**—DWELLINGS—D & E Corp., 8906 W. Olympic Blvd., Beverly Hills, plans by E. E. Carver, 7827 E. 8 St., Downey, 180 frame, stucco dwellings, Tract 20430, $1,750,000.

▲ **Calif., Pinole**—SHOPPING CENTER—J. H. Crawford, Development Co., Sunnyvale, shopping center, Tara Hills on Hy. 40. $1,000,000.

▲ **Calif., San Bruno**—HOME—Stoneson Development Co., 3150 20 Ave., San Francisco, 127-home subdivision. $2,159,000.

▲ **Calif., San Fernando**—DWELLINGS—Hartford Builders, 5336 Sepulveda Blvd., Van Nuys, plans by Matcham & Russell, 1258 W. First St., Los Angeles, 196 frame, stucco dwellings, Hubbard St., etc. $1,700,000.

▲ **Calif., San Rafael**—DEPARTMENT STORE—Emporium-Capwell Co., 835 Market St., San Francisco, rein.-con. modern department store near here. $5,000,000.

▲ **Conn., Meriden**—SHOPPING CENTER—Joseph P. Vetrano, 76 Wilcox St., Bristol, plans by Caproni Associates, 1221 Chapel St., New Haven, shopping center, East Main St., $2,000,000. Fusco-Amatruda Co., 59 Amity Rd., New Haven, consult. engrs.

▲ **Conn., South Windsor**—SHOPPING CENTER—Dr. John A. Farnham, Rye St., East Windsor Hill, plans by Rossetti & Di Corcia, 80 Elizabeth St., Hartford, shopping center, Route 5, $1,000,000.

▲ **Conn., West Hartford**—SHOPPING CENTER—Morama Corp., M. J. Neiditz & Co., Inc., agt., 95 Pearl St., Hartford, plans by Irving W. Rutherford, 49 Garden St., Hartford, shopping center, New Britain Ave. and S. Main St. $2,000,000. R. W. Loomis, 32 Maple Ave., Windsor, consult. engr.

▲ **Conn., West Hartford**—SHOPPING CENTER—Joseph P. Vetrano, 76 Wilcox St., Bristol, plans by Caproni Associates, 1221 Chapel St., New Haven, 2 story, brick, steel shopping center, incl. 13 stores and office space, Bishop's Corner, $3,000,000. Fusco-Amatruda Co., 59 Amity Rd., New Haven, consult. engr.

▲ **Conn., Windsor** — SHOPPING CENTER — Irving R. Stich Assocs., Inc., 611 New Park Ave., West Hartford, shopping center, Ellsworth Hy. $1,000,000.

▲ **Del., Wilmington**—APARTMENT—Pau-Mar Constr. Co., c/o Graham Assoc., archt., 2430 Pennsylvania

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Magnifying power of telescope	35X	30X	27X
Distance away you can read 1/100 ft. graduation	1200 ft.	1050 ft.	900 ft.
Diameter of objective lens	1.81 in.	1.485 in.	1.69 in.
Field of view (in minutes of arc)	64′	52′	60′
Coated optics	YES	YES	YES
Covered leveling screws	YES	YES	YES
Can you easily replace worn leveling screws in the field?	YES	NO	YES
Sensitivity of level vial (in seconds of arc per 2mm of graduation)	20″	20″	25″
Price — complete with carrying case, tripod and accessories — F.O.B. factory	$305.00*	higher	higher

*Price subject to change without notice.

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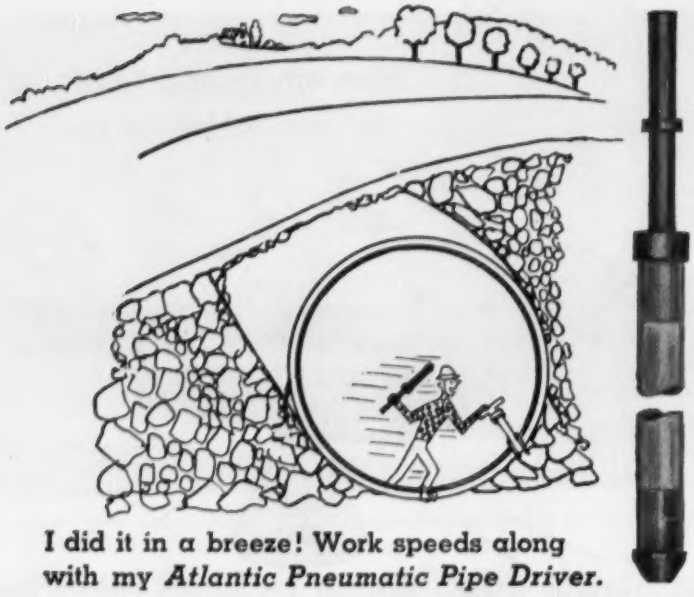

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Ave. N. W., Wash., D. C., 224-unit apartment, Pennsylvania Ave. and Greenhill Ave. $5,000,000. CD 12/27/54.

▲ **Ky., Radcliffe**—SHOPPING CENTER—Byron E. Cowan, Radcliffe, plans by McCulloch & Bickel, 1318 S. 4 St., Louisville, 180,000 sq. ft. shopping center, parking area to serve Fort Knox, Elizabethtown and adjacent territory. $4,000,000. Louis J. Frederick Assoc., 131 W. Main St., Louisville, consult. engrs.

▲ **Md., Fort George G. Meade**—HOUSING—U. S. Eng., P. O. Box 1715, Baltimore, Zone 3, plans by McGaughan & Johnson, 0200 P St. N.W., Wash. 6, D. C., construct and finance 1,000 Title VIII housing units, $10,000,000.

▲ **Md., Silver Spring**—HOMES—Dan Ostrow Constr. Co., 1422 K St. N. W., Wash., D. C., plans by Jack Cohen, 7961 Eastern Ave., 400-700 brick homes, Old Bladensburg Rd. $7,000,000-$12,000,000. Constr. in the Fall or Winter of 1956.

▲ **Minn., Royalton**—HOSPITAL—St. Gabriel's Hospital, Royalton, hospital expansion. $1,000,000.

▲ **Mo., St. Louis**—OFFICE—Sam Brown & Sons Realty & Constr. Co., 8230 Forsyth Blvd., Clayton, Zone 24, 10 story, bsmnt., brick, stone, steel office with adjacent parking areas on site 200x436 ft. in 4000 block Lindell Blvd. $2,500,000. Constr. in 2 or 3 months.

▲ **Neb., Omaha**—HOSPITAL St. Catherines Hospital, 9 and Forest St., hospital addn., $1,387,000.

▲ **Nev., Las Vegas**—HOTEL, etc.—Hotel Sahara, Las Vegas, plans by Martin Stern, Jr., 8325 Wilshire Blvd., Beverly Hills, Calif., Hotel Sahara addns., alterations, $3,500,000.

▲ **N. Y., Plattsburg**—SHOPPING CENTER—North Country Shopping Center, c/o A. H. Salkowtiz, archt., 87-25 Homelawn St., Jamaica, Zone 32, shopping center on 665 acre tract on Rte. 9, to include 900 houses, garden apartments, office medical bldg. and recreation center, $20,000,000.

▲ **N. Y., Smithtown**—HOUSES—Alexander Muss & Sons, Old Country Rd., Garden City, 1,000 houses on 317 acre tract in Kings Park section to be called County Village at Kings Park, $15,000,000. To go ahead in the Spring of 1956.

▲ **N. C., Reynolda**—CHURCH, etc.—Reynolda Presbyterian Church, Rev. W. R. Smith, Jr., Reynolda, plans by Larson & Larson, Reynolda, church, administration bldg., social bldg., educational bldg., 10-acre site, $1,000,000.

▲ **O., Brunswick**—HOMES—Southwest Development Co., 5546 Pearl Rd., Cleveland, Zone 29, plans by Midland Prefabricated Homes, Mansfield, 350 ranch type homes, $4,400,000. Constr. within 60 days.

▲ **O., Columbus**—SCHOOL—Catholic Diocese of Columbus, Bishop Michael J. Ready, 198 E. Broad St., high school, Livingston Ave. and Zettler Rd. $1,000,000. Plans ready by Feb. 1. CD 4/30/53.

▲ **O., Johnson's Island**—HOMES—Shirley Auslander, 2164 Edgewood St., Cleveland Heights and Walter Zaremba, 6575 York St., Cleveland, approx. 1,000 homes on Johnson's Island in Sandusky Bay, Inc. 86-acre recreation sect. in center of island, airport and boat docks. $1,000,000.

▲ **O., Lorain**—SHOPPING CENTER—Pittsburgh Syndicate, c/o Anchel Burg, 806 College Ave., Pittsburgh, Pa., 29 unit shopping center, 1 story, 100,000 sq. ft. brick, steel constr. 10-acre plot, Oberlin Ave., Meister Rd. $2,000,000.

▲ **O., Milford**—SHOPPING CENTER—Gallenstein Bros., Morrison Pl., Madeira, shopping center, U. S. 50 and Cemetery Rd. $1,500,000. Carl Rehring, 3798 Broadlawn St., Cincinnati, consult. engr. CD 6/15.

▲ **Ore., Klamath Falls**—HOUSING—P. Wks. Officer, 13th Naval Dist., 1611 W. Wheeler St., Seattle, Wash., construct, manage and finance, 220 family housing units for Air Force personnel near jet interceptor base. $2,860,000. CD 4/27, under Airports.

▲ **Pa., Hatboro**—SHOPPING CENTER—Owner, c/o Lionel Friedman, agt., Strouse Greenberg & Co., 1525 Locust St., Phila., shopping center, $1,000,000.

▲ **Pa., West Chester**—SCHOOL—Roman Catholic Archdiocese of Phila., 310 N. 19 St., St. Agnes Senior High School, $1,000,000.

▲ **Tex., Freeport**—ADMINISTRATION CENTER, etc—Dow Chemical Co. (Plant B), Freeport, plans by MacKie & Kamrath, 2713 Ferndale St., Houston, 2 and 3 story, 150,000 sq. ft. masonry administration center, $3,150,000; 2 story cafeteria, $350,000. Walter P. Moore, 2 Pinedale St., and Bernard Johnson & Assocs., 4926 Travis St., Houston, consult. engrs.

▲ **Tex., Houston**—CLASSROOM—Rice Institute, 6100 Main St., classroom bldg. $1,000,000. CD 3/3/50.

▲ **Tex., Port Arthur**—HOSPITAL—Methodist Hospital, c/o D. L. Landrum, Port Arthur, 100-bed hospital. $1,250,000.

▲ **Man., Winnipeg**—HOSPITAL—Grace Hospital, Arlington St. and Preston Ave., plans by Moody & Moore, 295 Broadway, 5 story, 45x100 ft., steel, concrete 60-bed Grade Hospital addn. $1,250,000. CD 12/20/45.

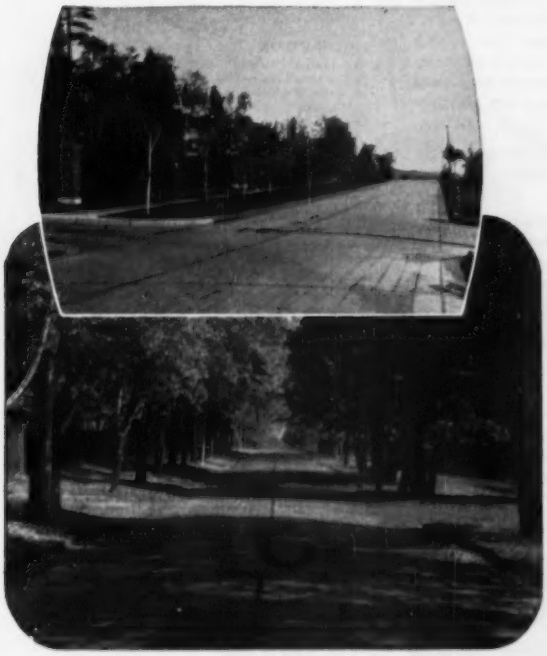
▲ **Man., Winnipeg**—HOSPITAL—Salvation Army, 538 Jarvis St., Toronto, Ont., plans by Moody & Moore, 295 Broadway Ave., 5 story, 60-bed maternity wing addn. to present hospital. $1,250,000.

▲ **Ont., Toronto**—OFFICE—55 Yonge St. Ltd., c/o Walter Zwig, 26 Queen St. E., plans by Page & Steele, 72 St. Clair Ave. W., 13 story, 88x158 ft. rein.-con., glass, stone office bldg., Yonge & Colborne Sts. $2,000,000. Hooper & Yolles, 111 Richmond St. W., consult. engrs. CD 12/19.

▲ **Ont., Uxbridge**—TRAINING SCHOOL—St. John's Training School, 127 Victoria Park, Toronto, Boy's Training School, 1 mi. north of here, $1,000,000.

(Continued on page 78)

MELROSE—Main St. paved in 1929. These photos were taken in 1929 and in 1955.



DULUTH—Seventh Street, looking east from 26th Avenue East, was built in 1909. The photos were taken in 1919 and 1953.

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BENSON—Pacific Ave., paved in 1929. Photos were taken from the same location in 1929 and 1954.

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(Continued from page 76)

▲ **Que., Hull**—HOUSING—Hull Economie Syndicate c/o Hull Hardward Co., Hull, housing program, incl. 100 homes, about ½ mi. east of Gatineau Point on Hy. 8, Parish of Notre Dame du Rosiare, $1,050,000.

▲ **Que., Vaudreuil**—HOUSING—Brentwood Constr., Inc., c/o Samuel Chait, 660 St. Catherine St. W., Montreal, 100 unit housing, $1,000,000. Work to start in Spring. (Total Constr. 400 unit housing, $4,000,000.)

INDUSTRIAL BUILDINGS

▲ **Ala., Listerhill**—PLANT—Fort Motor Co., 3000 Schaefer St., Dearborn, Mich., aluminum forging plant, $30,000,000.

▲ **Calif., Pleasanton**—ATOMIC LABORATORY—General Electric Corp., Atomic Power Laboratory, Plant Eng. Unit, c/o Engr., Building A-2, Room 200, 1 River Rd., Schenectady, N. Y., atomic laboratory, near here, over 15-year period, $6,000,000.

▲ **Conn., Middletown**—PLANT—Hartford Electric Light Co., 266 Pearl St., Hartford, Maromas Steam Power Plant addn. $12,000,000. Stone & Webster Eng. Corp., 90 Broad St., New York, N. Y. consult. engrs.

▲ **Del., Newark**—PLANT—Chrysler Corp., 341 Massachusetts Ave., Detroit, Mich., plans by Albert Kahn Associated Architecte & Engineers, Inc., consult. engr.-archt., New Center Bldg., Detroit, Mich., mfg. plant addn. $5,000,000.

▲ **Fla., Miami**—PLANT, etc.—Miami Daily News, 600 Biscayne Blvd., plans by Weed, Russell, Johnson Assocs., 550 Brickell Ave., 2 story, 175x400 ft., plant and office, 6.3 acre tract between Miami River and N. W. 17 St. $5,000,000. CD 2/10.

▲ **Ga., Jesup**—PLANT—Georgia Power & Light Co., 901 N. Patterson St., Valdosta, electric generating plant, $10,000,000.

▲ **O., Sharonville**—PLANT—Continental Can Co., 2510 Highland Ave., Norwood, 370,000 sq. ft. mfg. plant, 40-acre, junction of Kemper and Mosteller Rds. near here. $8,000,000. To be completed in early 1957.

▲ **O., Toledo**—GRAIN ELEVATOR—Continental Grain Co., Marine Trust Bldg., Buffalo, N. Y., 2-6,000,000 bu. grain elevator on 5.75 acres of land on east bank of Maumee River upstream from Toledo Marine Terminal, $3,000,000.

▲ **Pa., Berwick**—PLANT, etc.—Wise Potato Chip Co., Berwick, plant addn., storage and office, $1,500,000.

▲ **Tex., Bryan**—PLANT—The Texas Glass Mfg. Co., c/o Al L. Crystal, Shell Bldg., Houston, glass mfg. plant, $1,750,000 (incl. equip.); warehousing, $100,-000, 14-acre site.

▲ **Tex., El Paso**—PLANT—El Paso Natural Gas Products Co., (El Paso Natural Gas Products Co-operators), Bassett Tower, El Paso Tex., blending plant, $1,000,000.

▲ **Tex., El Paso**—PLANT UNIT—El Paso Natural Gas Products Co., c/o El Paso Natural Gas Co., El Paso alkylation plant unit, near here. $1,000,000.

▲ **Tex., Houston**—PLANT, etc.—Sheffield Steel Corp., c/o Industrial Rd., enlarge blast furnace, $1,500,000; mold foundry, $1,000,000; ore sintering plant, $1,-500,000; ore bedding sys., $750,000. CD 2/13/51.

▲ **Wis., Green Bay**—WAREHOUSE—Super Valu Stores, Inc., Hopkins, Minn., plans by Magney, Tusler & Setter, 303 Roanoke Bldg, Minneapolis, Minn., 1 story warehouse, Joanees Ave. and Hy. 41, $1,000,000. Bids in April or May. CD 10/26.

▲ **Alta., Calgary**—PLANT—Anthes-Imperial Co. Ltd., Barryman Rd., St. Catherines, Ont. 1 story, 40,000 sq. ft. plant $2,000,000.

▲ **B. C. Burnaby**—PLANT—Sidney Roofing & Paper Co. Ltd., 47 Songhees St., Victoria, paper board mfg. plant, 55-acre site along Fraser River between Wiggins and Mimto Sts. $5,000,000. Sandwell & Co. Ltd., 1500 W. Georgia St., Vancouver, consult. engrs. CD 11/4.

▲ **Sask., Estevan**—POWER PLANT—Saskatchewan Power Corp., 1739 Cornwall St., Regina, steam power plant. $40,000,000.

UNCLASSIFIED

▲ **Me., South Portland**—PIER—Portland Pipeline Corp., 335 Forest Ave., Portland, 1,965 ft. pier to accommodate oil tankers. $1,000,000. To go ahead in spring of 1956.

▲ **Texas**—GAS LINES, etc.—Texas Gas Corp., Prudential Bldg., Houston, extens., imprvs. to gas lines, transportation sys. (mostly in the Sabine-Neches Rivers area) at Winnie near Beaumont, $1,000,000; expansion of gas processing plants, at Winnie, near Beaumont, $500,000.

▲ **Tex., Houston**—PIER, etc.—Todd Shipyards, c/o Houston Ship Channel, reconstr. burned out pier, $1,000,000; reconstr. burned out docks, $2,000,000.

▲ **Washington**—NATURAL GAS PIPE LINE—Twin Cities Gas Co., Longview, natural gas pipe line and distr. facilities in Grays Harbor, Mount Vernon and Tumwater areas and extension of present mains in Longview and Kelso. $6,500,000. Work to start in Spring. E. Porter, Longview, consult. engr.

▲ **Washington**—GAS SUPPLY MAIN, etc.—Washington Natural Gas Co., Gasco Bldg., Seattle, Zone 1, supply main from point north of Bothell to Seattle, $1,500,-000; from point near Renton to Seattle, $1,000,000; from point east of city to shore of Lake Washington, $500,000; supply mains, Centralia-Chehalis, $200,000; supply mains, Everett, $600,000, Bids about Feb. 1; distribution system expansion, Tacoma $375,000, Work in 1956. supply mains, Tacoma, $1,500,000, Bids about Feb. 1; distribution sys. expansion $1,000,-000, Work in 1956. J. F. Gary, supt. of Engr.

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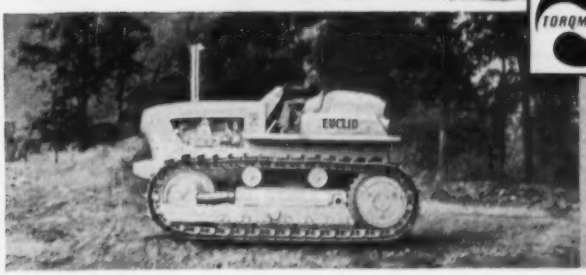

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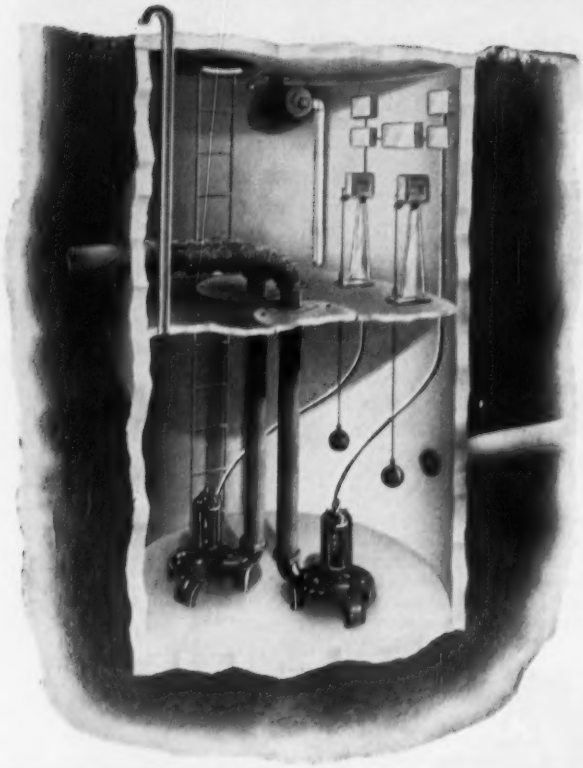

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† **Conn., New London**—STOCK RACK—BA 2/8—Dist. P. Wks., Federal Office Bldg., 90 Church St., New York 7, N. Y., stock rack for outside storage area, U. S. Navy Underwater Sound Laboratory, Fort Trumbull, Spec. 50317.

▲† **Massachusetts**—BA 2/16—U. S. Eng., 11 E. 16 St., New York 3, N. Y., Hoosic River Basin, Adams Flood Control Proj., Unit No. 5, Adams, CIVENG-30-075-56-6. $1,500,000-$2,000,000. CD 1/19.

BUILDINGS—BA

Conn., New Britain—DORMITORIES—BA 2/29—State P. Wks. Dpt., State Office Bldg., Hartford, student dormitories at New Britain Teachers' College, Proj. BI-R-116. $750,000. Plans deposit $15. Wm. Provoost, c/o owner, archt. CD 12/22/54.

HEAVY CONSTRUCTION—LB & CA

▲† **Wexler Constr. Co., Inc.,** Newton Highlands, Mass., LB, **$966,150.** bachelor officers' quarters, officers' club and NCO club, Dow Air Force Base, ENG-19-016-56-70, BANGOR, ME. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Jan. 24. CD 1/5.

† **W. H. Hinman, Inc.,** 58 Main St., Westbrook, Me., CA **$582,788,** est. $600,000, roads, utilities, paved storage, parking areas and railroad, Air Force Base, ENG-19-016-56-78, PORTSMOUTH, N. H. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Jan. 3. CD 1/11, under LB.

† **Davison Constr. Co., Inc.,** 1306A Elm St., Manchester, N. H., CA **$645,500,** est. $600,000-$700,000. wing headquarters bldg., 4 squadron headquarters bldgs., guardhouse, commissary clothing bldg., library bldg. and modification to chapel, Portsmouth Air Force Base, ENG-19-016-56-38, PORTSMOUTH, N. H. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. Bids Jan. 10. CD 1/16, under LB.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

M. DeMatteo Constr. Co., Quincy, Mass., LB **$4,610,395.** hy. and bridge construction (Southeast Expressway) Section 1, Neponset River to Neponset Circle, Boston. Bids Jan. 24. CD 12/28.

Consolidated Constr. Co., 919 Albany Ave., Hartford, Conn., LB, **$102,472,** sanitary sewer, portion of west and south interceptor Fern St. west of Fernridge Pk., WEST HARTFORD, CONN. Town, Town Hall, West Hartford, Conn. Bids Jan. 12.

BUILDINGS—LB & CA

Remington Rand Div., Sperry-Rand Corp., c/o Coletti Bros., archts., 687 Boylston St., Boston, Mass., rejected bids Dec. 7, OFFICE, 631-641 Commonwealth Ave., BOSTON, MASS. Est. **$750,000.** Plans being revised. CD 11/30.

▲ **John Cowper Co., Inc.,** Sidway Bldg., Buffalo, N. Y. CA general contract NUCLEAR REACTOR BLDG., CAMBRIDGE, MASS. Total est. cost **$3,000,000.** Massachusetts Institute of Technology, 77 Mass. Ave., Cambridge, Mass. ACF Industries, Inc., 30 Church St., New York, N. Y., consult. engrs. CD 11/29;
Ferguson Electric Constr. Co., 333 Ellicott St., Buffalo, N. Y. CA electrical work (Cambridge, Mass.).

▲ **E. Turgeon Constr. Co.,** 42 Weybosset St., Providence, R. I. CA Est. **$2,000,000.** superstructure for Industrial PLANT, EAST GREENWICH, R. I. Bostich, Inc., c/o Charles T. Main, Inc., engr., 80 Federal St., Boston, Mass. Bids Dec. 30. CD 12/12.

▲ **Baltimore Contractors, Inc.,** 711 S. Central Ave., Baltimore, Md., CA Est. **$1,000,000.** 90,000 sq. ft., steel frame and roof, concrete floor STEEL MILL for cold rolled, WILLIMANTIC, CONN. Jones & Laughlin Steel Corp., Gateway Center, Pittsburgh, Pa. Caproni Assoc., 1221 Chapel St., New Haven, Conn., archts. Awarded Jan. 23. CD 8/23.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

February 14 New Jersey

STREETS AND ROADS

February 14, 21 New Jersey

† **New Jersey**—BA 2/16—SPECIAL AAA FACILITIES—U. S. Eng., 111 E. 16 St., New York 3, N. Y., Special AAA Facilities, vicinity of Hanover, Morristown. $500,000-$750,000. CD 1/16.

BUILDINGS—BA

Pa., Bethlehem—SCHOOL—BA 2/6—Bethlehem Steel School Dist., Bethlehem, Lincoln Elementary School addn. $500,000, Brown & Genther, Bethlehem, archts. Charles E. Bird, Bethlehem, engr. CD 1/12.

Pa., Bethlehem—SCHOOL—BA 2/6—Bethlehem School Dist., Bethlehem, Wolf Elementary School, $520,000, Brown & Genther, Bethlehem, archts. Joseph E. Biro, Bethlehem, engr. CD 1/12.

▲ **Pa., Warren**—PLANT—BA 2/7—Sylvania Electric Products Inc., 440 Market St., Williamsport, (selected list bidders) plastic plant, warehouse, $1,-000,000, Paul Wanwert, c/o owner, ch. engr. CD 7/22.

▲ **Md., College Park** — LIBRARY — BA 2/14 — State, Dpt. P. Imprvts., 506 Park Ave., Baltimore, Zone 1, concrete, steel, brick masonry library, University of Maryland, $2,000,000. Plans deposit $50, Henry Powell Hopkins 10 E. Mulberry St., Baltimore, Zone 2, archt. Van R. Saxe, 1701 St. Paul St., Baltimore Zone 2, struct. engr. Jas Posey & Assoc., 10 E. Pleasant St., Baltimore, Zone 2, engrs. CD 10/11.

N. J., Stratford—SCHOOL—BA 2/16—Bd. Educ., Stratford elementary school. $500,000. Petty & Croft, 39 E. Main St., Moorestown, archts. CD 4/25.

N. Y., New Rochelle—DORMITORY—BA About 3/1—Iona College, 715 North Ave., dormitory. $450,000. Eggers & Higgins, 100 E. 42 St., New York, archts. CD 5/3.

▲ **Pa., Phila.**—HOUSING—BA 3/1—Phila. Housing Auth., 42 S. 15 St., North Allen Housing Proj., 2 apartments, 248 units; row houses 124 units and 15 bldgs., 10 and Poplar Sts. $3,000,000, Howell Lewis Shay & Assoc., Packard Bldg., archts., Keast & Hood, 2031 Chestnut St., engrs. CD 3/17/54.

HEAVY CONSTRUCTION—LB & CA

NEW YORK—Bureau Contracts & Accounts, Governor Alfred E. Smith State Office Bldg., Albany,

John Arborio, Inc., West Cedar St., Poughkeepsie, N. Y. CA **$710,535,** relocation, reconstr., Rte. 42 in town of Deerpark, Port Jervis-Sullivan Co. line, Pt. 1, S.H. 412, Orange Co. Bids Dec. 8. CD 12/12, under LB.

▲ **Charles F. Vachris, Inc.,** 9024 Ditmas Ave., Brooklyn 36, N. Y., LB **$2,618,000.** est. $3,110,600 (11 bidders) grading, paving, constr. grade separation structures, retaining walls, curbs, walls, malls, drainage facilities, electrical sys. Brooklyn-Queens Expressway (connecting hy.) from 38 to Woodside Aves. with adjoining sects. of intersecting streets, Queens Boro, NEW YORK. President Queens Boro, Queens Boro Hall, 120-55 Queens Blvd., Kew Gardens 24, N. Y. Bids Jan. 25. CD 1/4.

NEW YORK—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,

Potter-DeWitt Corp., Pavilion, N. Y., CA **$502,818,** straighten Rte. 18 and replace grade crossing separation structures carrying Erie R. R. over route on south edge of Gowanda-Dayton, SH 958, Cattaraugus Co. Bids Dec. 8, awarded Jan. 11. CD 12/12, under LB.

Turner Constr. Co., 420 Lexington Ave., New York 17, N. Y. CA Est. **$750,000.** 4 story television broadcasting and studio bldg., 1301-25 Ave. M. and 1262-1296 E. 14 St., BROOKLYN, N. Y. National Broadcasting Co., 30 Rockefeller Plaza, New York 20, N. Y. CD 1/3.

▲ **Tufano Contr. Corp.,** 32-17 Lawrence St., Flushing, N. Y., LB **$2,649,000** (6 bidders) paving, utilities for peripheral taxiways, New York International Airport, Contr. NYA-650.004, IDLEWILD, N. Y. Port of New York Auth., 111 8th Ave., New York 11, N. Y. Bids Jan. 24. CD 12/27.

▲ **Hendrickson Bros., Inc.,** 63 N. Central Ave., Valley Stream, N. Y., CA **$1,769,022,** sewers in Hewlett, Hewlett Harbor and Hewlett Bay Park area, MINEOLA, N. Y. County Executive, Nassau Co., Old County Court House, Mineola, N. Y. Bids Dec. 13, awarded Dec. 23. CD 12/27, under LB.

▲ **Heyl & Patterson, Inc.,** 120 Broadway, New York 4, N. Y., CA **$1,614,019.** Proposal "B", furnish, install two movable coal unloading towers for 59 Street Power Plant, Manhattan Boro, Contr. P-111, NEW YORK, N. Y. New York City Transit Auth., 370 Jay St., Brooklyn 1, N. Y. Bids Nov. 25, awarded Dec. 22. CD 12/8, under LB.

† **The Ferber Co.,** 16 Johnson Ave., Hackensack, N. J. LB **$749,922** (9 bidders) air force facilities (FY-56) airmen's dormitories, Griffiss Air Force Base, ENG-30-075-56-207, ROME, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Jan. 25. CD 1/11.

▲ **NEW JERSEY—PENNSYLVANIA**—Delaware Port Auth., Administration Bldg., Bridge Plaza, Camden, N. J.

W. V. Panghorne Co. Inc., 1927 Montgomery Ave., Phila., Pa., CA, **$1,242,000.** lighting sys. and electrical work, Contract No. 7, Walt Whitman Bridge between Phila., Pa. and Gloucester, N. J. Bids Jan. 12. CD 1/19, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

American Bridge Division, United States Steel Corp., 1617 Pennsylvania Blvd., Phila. 3, Pa. CA **$4,735,643.** constr. superstructure of main span of Fort Pitt Bridge exclusive of deck and sidewalk paving, 0.14 mi. long, city of Pittsburgh, U. S. Rtes. 22 and 30, Allegheny Co. CD 1/11, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—**John F. Casey Co.,** P.O. Box 1888, Pittsburgh 30, Pa. CA **$5,597,419.** constr. 1.23 mi. c. conc. pavement, substructure on eastbound parkway and westbound parkway, pavement of ramps on Grant St., Fort Pitt Blvd. and New Street which is part of Penn-Lincoln Parkway, city of Pittsburgh, U. S. Rtes. 22 and 30, Allegheny Co.;

Pa.—**Fred W. Ewing, Inc.,** 405 W. Main St., Corry, Pa. CA **$1,837,835.** constr. 4.72 mi. divided hy., flexible base with bit. surf. on each side of concrete or earth divisor; two rein.-con. boxes, five concrete rigid frame bridges and surfacing three existing bridges with bit. in city of Sharon, easterly, T.R. 62, Mercer Co. CD 1/11, under LB.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Bero Constr. Corp., Box 477, Hampton, Va. LB **$1,149,-065.** grading, paving 2.589 mi. U. S. Rte. 40, East slope Martin Mountain, Contr. A. 461-1-620, Allegany Co. Norman Pritchett, c/o owner, ch. engr. CD 1/21/54.

† **Officer in Charge of Construction,** U. S. Naval Academy, Annapolis, Md., cancelled bids to have been opened Dec. 13, pointing exterior walls, chapel Bldg. 10, U. S. Naval Academy, NOY 88494, Spec. 47404, ANNAPOLIS, MD. CD 12/2.

† **F. P. Asher Jr. & Son, Inc.,** 1715 West Ext., Annapolis, Md. LB **$510,517.** (4 bidders) west apron paving extensions, Andrews Air Force Base, ENG-49-080-56-19 (20), ANDREWS AIR FORCE BASE, MD. U. S. Eng., First and Douglas Sts. N. W., Wash., D. C. Bids Jan. 19. CD 12/23

▲ **DeLuca-Davis Constr. Co.,** 1968 Belair Rd., Baltimore, Md., LB, **$1,796,064.** first section Jones Fall Valley Expressway covering stream from point near Guilford Ave. west to beyond Maryland Ave., BALTIMORE, MD. City Bureau Hys. 303 Municipal Bldg., Baltimore, Md. Bids Jan. 25. CD 1/13.

BUILDINGS—LB & CA

Michael H. Field, Inc., 1413 Pitkin Ave., Brooklyn 33, N. Y., LB **$387,764** (19 bidders) Broadway Branch LIBRARY, southwest corner Broadway and 41 St., Queens Boro, NEW YORK. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids Jan. 25. CD 1/6.

Remsen Harbor Corp., 188 Montague St., Brooklyn 2, N. Y. Owner Builds. **$847,000.** 10 story APARTMENT, 66-66 Remsen St., BROOKLYN, N. Y. CD 11/25.

Milan Development Corp., 26 Court St., Brooklyn 2, N. Y. Owner Builds. **$773,300.** 6 story APARTMENT, 3402-24 Snyder Ave., BROOKLYN, N. Y. CD 9/13/55.

Pavan Homes, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$600,000.** 45 HOUSES, Fifth Ave. and Elwood Rd. EAST NORTHPORT, N. Y.

San Souci Corp., c/o Philip Birnbaum, archt., 12 E. 48 St., New York 17, N. Y. Owner Builds. **$906,000.** 8 story APARTMENT, 71 Rd. and 112 St., FOREST HILLS, N. Y. CD 8/15.

Alex Zaczek Constr. Co., Inc., Monument St., Deposit, N. Y. LB **$546,000.** 1 story elementary SCHOOL, GOSHEN, N. Y. Bd. Educ., Goshen, N. Y. Moore & Hutchins, 215 E. 37 St., New York 16, N. Y., archts. Bids Dec. 28.

▲ **George A. Fuller Co.,** 597 Madison Ave., New York, N. Y. CA Est. **$15,000,000.** 32 story OFFICE, W. 40 St. and Avenue of Americas, NEW YORK, N. Y. 111 W. 40 St., (General Realty & Utilities Corp.), 285 Madison Ave., New York, N. Y. CD 2/4/55.

▲ **John Lowry, Inc.,** 52 Vanderbilt Ave., New York 17, N. Y. CA Est. **$1,500,000.** AUDITORIUM addn., LABORATORIES, CLINICS, etc., 1091 Amsterdam Ave., NEW YORK, N. Y. St. Luke's Hospital, 421 W. 113 St., New York, N. Y. CD 2/1/55.

▲ **Slattery Contr. Co.,** 46-36 54 Rd., Maspeth, N. Y., LB **$1,687,000** (2 bidders) foundation for St. Mary's Park HOUSES, Proj. No. NYC-26, Bronx Boro, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. Bids Jan. 24, CD 12/14;
C. E. Youngdahl & Co., Inc., 29-28 41 Ave., Long Island City, N. Y., LB **$7,342,000** (2 bidders) general constr. (NYCHA);
S. S. Silberblatt, Inc., 25 W. 45 St., New York 19, N. Y., LB **$8,719,100** (8 bidders) general constr. and foundations (NYCHA);
Harry Starkman & Bros., 348 Brook Ave., New York 54, N. Y., LB **$657,600** (5 bidders) heating and ventilating (NYCHA);
Simpson Electric Corp., 71 E. 116 St., New York 29, N. Y., LB **$679,400** (8 bidders) electrical work (NYCHA);
Lipsky & Rosenthal, Inc., Lexington Ave. and 115 St., New York 29, N. Y., LB **$971,182** (7 bidders) plumbing (NYCHA).

▲ **Greenhaven Acres Homes,** c/o Wesco Realty Co., 22 Purchase St., Rye, N. Y. Owner Builds. **$1,500,000** 40 HOUSES, 25-acre tract between Greenhaven Rd. and Barlow Lane, east of Boston Post Rd., RYE, N. Y.

Walter A. Stanley Constr. Co., Inc., 23 Railroad Ave., Ossining, N. Y., CA **$568,909,** general constr. elementary SCHOOL, Osborn Rd., RYE, N. Y. Bd. Educ., Parson St., Rye, N. Y. Bids Nov. 29. CD 12/7, under LB.

▲ **Carlton, Inc.,** c/o M. George Vuinovich, archt., Palisade Ave., Englewood Cliffs, N. J. Owner Builds. **$1,500,000,** Ramsey SHOPPING CENTER, Route 17 and Franklin Turnpike, RAMSEY, N. J.

John McShain, Inc., 1750 N. Olden Ave., Trenton, N. J. CA Est. **$500,000.** 2 story high SCHOOL, Blackburn Rd., SUMMIT, N. J. Oak Knoll School of the Holy Child, Jesus, 44 Blackburn Rd., Summit, N. J. CD 6/21.

▲ **Peronace & Bressi,** 111 Church Rd., Cheltenham, Pa. CA **$1,000,000.** RESIDENTIAL DEVELOPMENT, 80 units, Rte. 309, COLMAR, PA. Colmar Development Corp., 111 Church Rd., Cheltenham, Pa.

▲ **Washington Lumber Co.,** 612 Washington Ave., Phila., Pa. Separate Contracts. Est. **$2,640,000.** RESIDENTIAL DEVELOPMENT, 240 units, Newportville Rd., CORNWELLS HEIGHTS, PA.

J. Cutler & Sons Co., 1615 Chelten Ave., Phila., Pa. Separate Contracts. $750,000. RESIDENTIAL DE-

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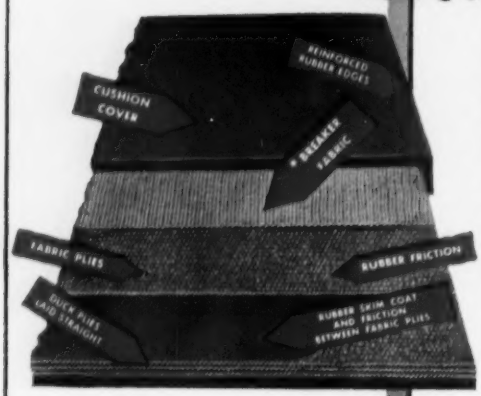

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VELOPMENT, 56 units, Convent Ave., PHILA., PA. S. Rochlis, 5664 Diamond St., Phila., Pa., archt.

▲ **Mellon-Stuart Co.**, 210 E. Parkway, Pittsburgh, Pa. CA Est. **$6,000,000.** 12 story, steel HEADQUARTERS OFFICE, PITTSBURGH, PA. Bell Telephone Co., 416 7th Ave., Pittsburgh, Pa. Bids Dec. 6. CD 11/30.

▲ **Herman Silver**, 2044 Chestnut St., Phila., Pa. Separate Contracts. **$4,050,000.** RESIDENTIAL DEVELOPMENT, Gravel Hill Rd., SOUTHAMPTON, PA.

▲ **Henry C. Beck Co.**, 13 Peachtree St., Atlanta, Ga., CA, **$4,000,000.** OFFICE, WILMINGTON, DEL., 100 W. 10 St., Corp., 249 Delaware Trust Bldg., Wilmington, Del. CD 4/14.

SOUTH

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

February 7 West Virginia February 15 Louisiana

STREETS AND ROADS

February 7 West Virginia

† **Florida**—BA About 2/21—U. S. Eng., P. O. Box 4970, Jacksonville, Zone 1, dredging channel, approx. 105,000 cu. yd. excav. in San Sebastian River from mouth to King St. Bridge with turning basin near the upper end, St. Augustine Harbor, CIVENG-08-123-56-43. CD 11/24/43.

▲ **Ky., Louisville**—BA 3/27—Metropolitan Sewer Dist., 412 W. Market St., sewage treatment plant, incl. eight 1 and 2 story structures, 4 sedimentation tanks, 3 digestion tanks, 2 elutriation tanks, sewers, channel conduits, pipe lines. Plans deposit $150. Metcalf & Eddy, 1300 Statler Bldg., Boston 16, Mass., engrs., adv. ENR 2/2. CD 7/12/54.

HEAVY CONSTRUCTION—LB & CA

▲ **VIRGINIA**—Commonwealth of Va., Dpt. Hys., Central Hy. Office Bldg., 1221 E. Broad St., Richmond,

Bowers Constr. Co., Box 1706, Raleigh, N. C., LB **$2,422,071,** Hampton Creek Bridge, East Branch Creek Bridge and approaches, Contr. No. B-2 (Hampton Roads Proj.). Bids Jan. 25. CD 12/30.

S. J. Bell Constr. Co., 3610 Wheeler Ave., Alexandria, Va., CA **$622,248,** Contr. No. 41, approx. 83,000 lin. ft. sanitary sewers, appurtenances, FAIRFAX, VA. Fairfax Co., Court House, Fairfax, Va. Bids Dec. 15. CD 11/18.

▲ **NORTH CAROLINA**—State Hy. & P. Wks. Comn., Raleigh,

N. C.—**Perry M. Alexander Constr. Co.**, Box 5202, Asheville, N. C., LB **$153,146,** est. $175,000-$200,000, CABC, bit. surf. tr., 3.425 mi. NC 63, Proj. 9055. S-397 (5), Buncombe Co.;

N. C.—**Barrus Constr. Co.**, Box 395, Kingston, N. C., LB **$271,141,** est. $300,000-$400,000, CABC, b. conc. binder and surf. 1.605 mi. US 17. Proj. 2072. U-196 (9), U-225 (4), Craven Co.;

N. C.—**E. F. Blankenship Co.**, 1308 W. Main St., Salem, Va., LB **$226,506,** est. $225-000-$250,000. STBC, b. conc. binder, surf. and structures 0.55 mi. US 1, Proj. 6644. SF-710 (1), Richmond Co.;

N. C.—**Dickerson, Inc.**, Monroe, N. C., LB **$319,035,** est. $300,000-$400,000, CABC, sand asph. or b. conc. surf. 12.18 mi. Proj. 2-457. S-641 (1), Onslow Co.;

N. C.—**W. E. Graham & Sons**, Box 268, Cleveland, N. C. LB **$322,239,** est. $300,000-$400,000, CABC, bit. surf. tr. 8.66 mi. NC 49, Proj. 5172. SF-236 (10), Davidson Co.;

N. C.—**J. S. Hill Constr. Co.**, Washington, N. C., LB **$334,677,** est. $300,000-$400,000. CABC, bit. surf. tr. 14.4 mi. US 264. Proj. 1031, F-204 (2), F-192 (4), Beaufort Co.; LB **$323,217,** est. $300,000-$400,000, CABC and bit. surf. tr. 7.66 mi. US 264. Proj. 1033. F-216 (2), Beaufort Co.;

N. C.—**Suber & Co., Inc.**, Whitemire, S. C., LB **$962,410,** est. $400,000-$500,000, grading 11.55 mi. US 29 (reloc.) Proj. 6522. U-647 (3), F-647 (2), Mecklenburg Co.;

N. C.—**Thompson-Arthur Paving Co.**, Box 1197, Greensboro, N. C., LB **$292,757,** est. $250,000-$300,000, sub-grade reinf., c. conc. pavement CABC and b. conc. binder and surf. or SABC, bit. surf. tr. b. conc. binder and surf. 5.5 mi. US 15 and 501. Proj. 4159. F-393 (4), Orange and Durham Counties. Bids Jan. 24. CD 1/16.

▲ **NORTH CAROLINA**—State Hy. & P. Wks. Comn., Raleigh,

N. C.—**Wannamaker & Wells, Inc.**, Orangeburg, S. C., LB **$1,243,353,** est. $400,000-$500,000, Parts A and B structures 11.55 mi. US 29 (reloc.), Proj. 6522, U-647 (3), F-647 (2), Mecklenburg Co.;

N. C.—**Dickerson, Inc.**, Monroe, N. C., LB **$584,573,** est. $400,000-$500,000, structures Part A, 11.55 mi. US 29 (reloc.), Proj. 6522, U-647 (3), F-647 (2), Mecklenburg Co.;

N. C.—**Jesse M. Coble**, Brandt St., Greensboro, N. C., LB **$697,125,** est. $400,000-$500,000, structures Part B, 11.55 mi. US 29 (reloc.) Proj. 6522, U-647 (3), F-647 (2), Mecklenburg Co. Bids Jan. 24. CD 1/16.

† **Southland Pool & Engineering Co.**, 3240 Peachtree Rd. N.E., Atlanta, Ga., LB **$188,023,** swimming pool, wading pool and bathhouse, Charleston Air Force Base, ENG-38-081-56-45, CHARLESTON, S. C. U. S. Eng., 31 Customhouse, Charleston, S. C. Bids Jan. 13, CD 12/21.

Dawson Eng. Co., 10 Gillon St., Charleston, S. C. LB **$99,249,** washrack, Charleston Air Force Base, ENG-38-081-56-45 (Charleston, S. C.).

† **R. H. Wright Jr. & Assocs.**, P. O. Box 1580, Columbus, Ga., CA **$359,130.** organizational maintenance shops,

squadron operations bldg., Turner Air Force Base, ENG-09-133-56-25, ALBANY, GA. U. S. Eng., 200 E. St. Julian St., Savannah, Ga. Bids Dec. 11. CD 11/3.

▲ **FLORIDA**—Florida State Turnpike Auth., Communications Bldg., Fort Lauderdale,
FSTA—**Brinson Allen Constr. Co.**, 51 St. and E. Broadway Ave., Tampa, Fla., LB, **$612,516,** roadbed and base 14.4 mi. Broward and Palm Beach Counties;
FSTA—**R. H. Wright & Son**, 1050 N.E. 5 Terrace, Ft. Lauderdale, Fla., LB, **$319,792.** Sunrise Blvd. from turnpike east to Ft. Lauderdale city limits, Broward Co. Bids Jan. 19.

▲ **FLORIDA**—State Road Dpt., Tallahassee,
Cleary Bros. Constr. Co., Box 6815, West Palm Beach, Fla., CA, **$2,152,761,** (1) Structures A and C, each 36 ft. concrete approach spans, double leaf bascule span and 1 steel, concrete flanking span at each end of bascule span (2) Structures B and D, 36 ft. concrete spans (3) embankment (4) toll facilities 5,260 lin. ft. Road A1A, Job 8904-175, Martin Co. Bids Sept. 20, awarded Jan. 19. CD 9/26, under LB.

▲ **Atlantic Gulf & Pacific Co., McWilliams Dredging Co., Arundel Corp., Western Contractors & Gahagan Dredging Co.**, 909 S. Jefferson Davis Parkway, New Orleans, La., LB, **$10,248,798.** Items 1 thru 4; **LB $9,680,599.** Items 1A thru 4, landfill and site development Interama Site, Graves Tract, MIAMI, FLA. Inter-American Center Authority, 400 Ainsley Bldg., Miami, Fla. Bids Jan. 18. CD 1/11.

† **Great Lakes Dredge & Dock Co.**, 124 Camp St., New Orleans, La., CA **$488,105,** fill for runway exten., MacDill Air Force Base, ENG-08-123-56-24, TAMPA, FLA. U. S. Eng., P. O. Box 4970, Jacksonville, Fla. Bids Sept. 27 rejected, LB **$998,888.** CD 10/5, under LB.

Gervais F. Favrot, 330 Balter Bldg., New Orleans, La. CA **$519,824.** rein.-con. swimming pool reinforced pedestrian overpass and water filtration equip. at Pontchartrain Beach, NEW ORLEANS, LA. Bd. Levee Comn., Civil Courts Bldg., New Orleans, La. Bids Jan. 10, awarded Jan. 16. CD 1/20, under LB.

Clarke Stewart & Wood, 328 Georgetown St., Lexington, Ky., LB **$322,684,** Contract 2, water treatment plant, HARRODSBURG, KY. City, City Hall, Harrodsburg, Ky. Bids Jan. 27. CD 12/29;
Tennessee Constr. Co., 837 Sutton Hill Rd., Nashville, Tenn., LB **$53,607.** Contract 3, water main extens. (Harrodsburg, Ky.).

Munick Eng. Co., 420 Newman St., Jeffersonville, Ind., LB **$94,600** (7 bidders) booster pumping station and paving, West Port Rd. and Herr's Lane, LOUISVILLE, KY. Louisville Water Co., 435 S. 3 St., Louisville, Ky. Bids Jan. 24. CD 8/9.

† **Shelby Electric Co. Inc.**, 112 E E H Crump Blvd., Memphis, Tenn., LB **$86,730,** install control sys. for operation of transonic circuit of propulsion wind tunnel, Arnold Engineering Development Center. TULLAHOMA, TENN. U. S. Eng., Tullahoma, Tenn. CD 11/16/54.

BUILDINGS—LB & CA

▲ **Babcock & Wilcox Co.**, 161 E. 42 St., New York, N. Y. CA Est. **$55,000,000.** POWER STATION to be known as Clinch River Plant, 450,000 kw, two 10 story boilers, CARBO, VA. Appalachian Electric Power Co., 40 Franklin Rd., Roanoke, Va. American Gas & Electric Co., 30 Church St., New York 8, N. Y., engrs;
General Electric Co., River Rd., Schenectady, N. Y. CA, two cross-compound turbine generators (Carbo, Va.).

Ivy Constr. Corp., 920 Harris St., Charlottesville, Va., LB **$762,625,** 75,000 sq. ft. FACTORY, Rte. 29 and Hydralic Rd., CHARLOTTESVILLE, VA. Sperry Piedmont Co., Div. of Sperry Rand Corp., Charlottesville, Va. Bids Jan. 17. CD 1/17.

W. H. Weaver Constr. Co., Inc., 214 W. Gaston St., Greensboro, N. C., LB **$752,735.** Northwest Junior HIGH SCHOOL, GREENSBORO, N. C. Bd. Educ., Ben L. Smith, supt., 617 Simpson St., Greensboro, N. C. Bids Jan. 17. CD 12/22.

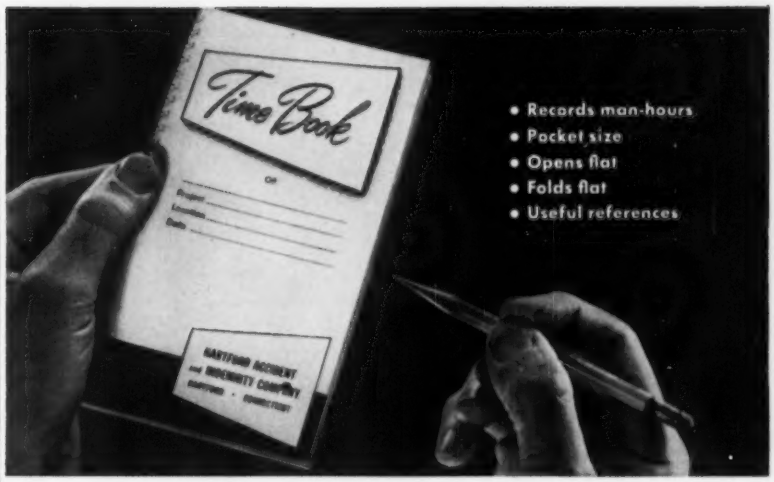
Albritton-Williams, Inc., 1512 S. Monroe St., Tallahassee, Fla., LB, **$757,400,** main SANCTUARY and EDUCATIONAL BLDG., TALLAHASSEE, FLA. First Baptist Church, 108 W. College Ave., Tallahassee, Fla. Prentiss Huddletson & Assocs., 1934 Thomasville Rd., Tallahassee, Fla., archts.-engrs.

▲ **Ruscon Constr. Co.**, Box 837, 149 E. Bay St., Charleston, S. C., LB, **$1,024,439,** foundations for TEACHING HOSPITAL, University of Florida, GAINESVILLE, FLA. State Bd. Control, Tallahassee, Fla. Guy C. Fulton, Bd. Control, University of Fla., Gainesville, archt. Moran, Proctor, Mueser & Rutledge, 420 Lexington Ave., New York, N. Y., engrs. CD 8/29/51.

Daniel Constr. Co., 822 7 Ave. S., Birmingham, Ala., CA, **$745,000.** (8 bidders) OFFICE, 930 S. 20 St., BIRMINGHAM, ALA. Blue Cross-Blue Shield of Alabama, 2119 1 Ave. N., Birmingham, Ala. Van Keuren & Davis, 3004 7 Ave. S., Birmingham, Ala., archts. Awarded Jan. 21.

▲ **Daniel Constr. Co.**, 822 7 Ave. S., Birmingham, Ala., LB **$1,853,777** (5 bidders) 5 story, 2 bsmnt., steel, concrete BANK ANNEX, 5 Ave. N. and 18 St., BIRMINGHAM, ALA. Birmingham Branch, Federal Reserve Bank of Atlanta, 104 Marietta St. N.W., Atlanta, Ga. CD 5/11.

▲ **R. F. Farnsworth & Co., Inc.**, 1515 S. Salcedo St., New Orleans, La. LB **$1,698,500.** (6 bidders) 9 story, steel, rein.-con. Jefferson Parish COURT HOUSE, GRETNA, LA. Jefferson Parish Police Jury, Gretna, La. Bids Jan. 18. CD 12/9.



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East Kentucky Rural Electric Co-operative Corp., Winchester, Ky., cancelled bids to have been opened Jan. 23, superstructure 104x230 ft., brick 3rd unit Dale GENERATING STATION, Contr. 109, FORD, KY. $100,000. Will re-advertise. CD 1/10.

† **Southern Constr. Co.,** P. O. Box 1307, Augusta, Ga., CA $751,625, (A) two dormitory bldgs. (B) dining hall (C) paving, ENG-40-058-56-19. FORT CAMPBELL, KY. U. S. Eng., 306 Federal Office Bldg., Nashville, Tenn. Bids Dec. 8, awarded Jan. 20. CD 12/20, under LB.

▲ **Rock City Constr. Co.,** 4401 Kentucky Ave., Nashville, Tenn., LB $2,349,000, est. $1,500,000. repair, restore STATE CAPITOL BLDG., NASHVILLE, TENN. State of Tenn., State Capitol Bldg., Nashville, Tenn. CD 11/15.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 8 Michigan
STREETS AND ROADS
February 6 Michigan February 21 Ohio

Mich., Blissfield—BA 2/16—Village, Arthur Donaldson, clk., Blissfield, Sect. A, 14,800 ft. 6- to 36-in. interceptor sewers; Sect. B, 18,800 ft. 6- to 36-in. local sewers; Sect. C, 6,700 storm sewers; Sect. D, primary sewage treatment plant. Plans deposit $35. Finkbeiner, Pettis & Strout, 518 Jefferson Ave., Toledo, O., engrs. CD 5/1/53.

Mich., Traverse City—BA 2/23—State, A. N. Langius, dir., State Bldg., Lewis Cass Bldg., 300 S. Walnut St., Lansing, 250,000 gal. elevated steel water tank, concrete fdn., Traverse City State Hospital.

BUILDINGS—BA

Mich., Bloomfield Hills—SCHOOL—BA 2/8—Bd. Educ., School Dist. No. 3, Fractional, L. C. Burch, secy., 156 E. Square Lake Rd., Pontiac, Hickory Grove Elementary School. Plans deposit $25. Linn Smith AIA, 114 S. Woodward Ave., Birmingham, archt. Bids 1/10, rejected. CD 1/23, under CA.

Mich., Saginaw—SCHOOL—BA 2/14—City, School District, J. Robert Grube, secy., 544 Millard St., Sheriden Park School, Tausend and Livingston Sts. Plans deposit $50. Samuel C. Allen, Bearinger Bldg., archt.

▲ **Mich., Romulus**—HIGH SCHOOL—BA 2/16—Romulus Township School Dist., Carl W. Morris, secy., 11401 Olive St., Romulus, high school, Wayne Rd. $1,300,000. Plans deposit $50. Jahr-Anderson Assoc., Inc., 15011 Michigan Ave., Dearborn, archt. CD 6/22/54.

Mich., Ann Arbor—LIBRARY—BA 2/28—The Regents of University of Michigan, W. K. Pierpont, vice pres., Plant Service Bldg., North University Ave. and Forest Ave., Ann Arbor, Proj. No. 55, undergraduate library. Plans deposit $100. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, Mich., archt. CD 12/4/53.

† **Mich., Dearborn**—WARD—BA 2/28—Veterans Admin. Munitions Bldg., Wash., D. C. NP locked Ward Bldg. No. 1 alterations, Veterans Admin. Hospital. Extended date. CD 1/12.

BUILDINGS—SLC

▲ **Ill., McCook**—MANUFACTURING, etc.—Electro-Motive Div., General Motors Corp., General Motors Bldg., Detroit, Mich., soon lets contract Mfg. Bldg. No. 100, and service bldg. $2,000,000. Argonaut Realty Div., c/o General Motors Corp., Research Bldg., Detroit, Mich., archt.

▲ **Ind., Gary**—PLANT—Gary Printing & Publishing Co., 451 Broadway, soon lets contract, newspaper plant, 1065 Broadway. $1,700,000. Beine, Hall & Curran, 607 Broadway, archts.

HEAVY CONSTRUCTION—LB & CA

Republic Structural Iron Works, 1290 E. 53 St., Cleveland 14, O., LB $74,883, est. $62,000 (4 bidders) steel grandstand for high school stadium, MAPLE HEIGHTS, O. Bl. Educ., 5500 Clement Dr., Maple Heights, O. Wm. Councell, c/o owner, engr. Bids Jan. 19. CD 11/11, under Public Buildings.

Great Lakes Plumbing & Heating Co., 4521 Diversey St., Chicago, Ill., LB, $383,780. sanitary sewers, SYCAMORE, ILL. City, City Hall, Sycamore, Ill. Bids Jan. 16. CD 1/3.

BUILDINGS—LB & CA

▲ **The Austin Co.,** 16112 Euclid Ave., Cleveland 12, O. CA Est. $3,500,000. design and construct 1 story 350,000 sq. ft. steel, brick sill walls and corrugated asbestos PLANT for mfg. garden, lawn and farm tools, Saybrook Twp., near ASHTABULA, O. True Temper Corp., Keith Bldg., Cleveland 15, O. Awarded Jan 18.

† **Kay-Cee Constr. Co.,** 2647 W. Lawrence St., Chicago, Ill., CA $814,000, LAUNDRY BLDG. No. 143, Veterans Admin. Center, DAYTON, O. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Dec. 20, awarded Jan. 17. CD 1/6.

Larson & Danielson, 302 Tyler St., La Porte, Ind., LB, $441,590. HIGH SCHOOL, CHESTERTON, IND. Westchester Twp., S. 19 St., Chesterton, Ind. CD 1/12.

▲ **Koppers Co.,** Koppers Bldg., Pittsburgh, Pa., CA $12,000,000. 79 COKE OVENS, EAST CHICAGO, IND. Youngstown Sheet & Tube Co., East Chicago, Ind. Awarded Jan. 16. CD 1/5.

▲ **Hilltop Constr. Co.,** 614 Washington St., Gary, Ind. Own Forces. $4,800,000. 250 HOUSES, GARY, IND.

▲ **Patterson Emerson Comstock, Inc.,** 313 E. Carson St., Pittsburgh, Pa. CA $13,000,000 FACTORY, MISHAWAKA, IND. Rockwell Spring & Axle Co., 843 4 Ave., Corapolis, Pa. Awarded Jan. 13. CD 12/22.

▲ **Allis-Chalmers Mfg. Co.,** 864 S. 70 St., Milwaukee 1, Wis., CA Est. $45,000,000. 305,000 kw. turbine GENERATOR, Fisk Station, 1111 Cermak Rd., CHICAGO, ILL. Commonwealth Edison Co., 72 W. Adams St., Chicago 90, Ill.

▲ **Goodwin Constr. Co.,** 320 S. Spaulding St., Chicago, Ill., CA, $1,000,000, HOTEL, 55 and Cicero Sts., across from Municipal Airport, CHICAGO, ILL. The Continental Hotel, c/o A. W. Kirschenbaum, archt., 320 S. Spaulding St., Chicago, Ill., archt. Awarded Jan. 16.

Algot B. Larson, Inc., 3827 W. Lake St., Chicago, Ill., CA, $450,000. HOME FOR AGED, CHICAGO, ILL. Central Baptist Home for the Aged, Lawrence and Canfield Aves., Chicago, Ill. Awarded Jan. 16. CD 1/6.

▲ **Gust K. Newberg Constr. Co.,** 2040 N. Ashland St., Chicago, Ill., LB $4,647,000 HOSPITAL and X-RAY BLDG., in West Side Medical Center, CHICAGO, ILL. Presbyterian Hospital, 1753 Congress St., Chicago, Ill. Bids Jan. 16. CD 12/21.

▲ **Evans Constr. Co.,** 1900 E. Washington St., Springfield, Ill., CA $1,700,000, general contract 13 story APARTMENT, Seventh St. and Lawrence Ave., SPRINGFIELD, ILL. Franklin Life Insurance Co., 800 S. 6 St., Springfield, Ill. Bids Dec. 22. CD 4/7.

Leigh-Jon Builders, 621 Oakwood St., Geneva, Ill., CA, $800,000. SHOPPING CENTER, ST. CHARLES, ILL. Gene Beak Assocs., agent, 3034 W. Devon St., Chicago, Ill. Awarded Jan. 6.

L & H Builders, 719 S. Lake St., Mundelein, Ill. Own Forces. $950,000. 70 HOMES, WAUKEGAN, ILL.

▲ **Wilmington Homes, Inc.,** 5850 N. Clark St., Chicago, Ill. Own Forces. $5,500,000. 400 HOMES, WILMINGTON, ILL.

Construction Engineers, 226 Spring St., Glen Ellyn, Ill. Own Forces. $500,000. 30 HOMES, WHEATON, ILL. J. Hoendervoogt, 7918 Champlain St., Chicago, Ill., archt.

▲ **Becker Constr. Co.,** 7701 W. Blue Mound Rd., Milwaukee, Wis., CA Total Est. $19,500,000. excavation and foundations for Unit No. 4, POWER PLANT, Oak Creek, MILWAUKEE, WIS. Wisconsin Electric Power Co., 231 W. Michigan St., Milwaukee, Wis. Bids Dec. 22. CD 12/13.

Cream City Constr. Co., 5435 N. 27 St., Milwaukee, Wis., CA Est. $850,000, 1 story, 103x240 ft., concrete, steel, brick OFFICE, MILWAUKEE, WIS. Mill Road Development Co., 5435 N. 27 St., Milwaukee, Wis. F. W. Woolworth Co., Minneapolis, Minn., lessee.

John D. Harrison, 14 Englewood St., Detroit 2, Mich. Owner Builds. $800,000. Bloomfield Farms SUBDIVISION 1, 25 acre site, BLOOMFIELD, MICH.

▲ **Madison Constr. Co.,** 600 Woodward Ave., Detroit, Mich. CA Est. $3,000,000. 250 brick HOUSES, Beck, Willowby and Nine Mile Rd. east, EAST DETROIT, MICH. Fairway Realty Co., 907 S. Woodward St., Royal Oak, Mich.

▲ **Harry Slatkin Builders, Inc.,** 11534 Dexter St., Detroit, Mich. CA Est. $1,200,000. 100 brick HOMES, Plymouth Rd., LIVONIA, MICH. Slater Realty Co., (agent), 18600 James Couzens Hy., Detroit 35, Mich.

▲ **Enterprise Building Co.,** 19929 Bradford St., Detroit 5, Mich. CA Est. $1,300,000. 100 brick ranch HOMES, NANKIN, MICH. Myers-Hill Realty Co., agent, 29936 Ann Arbor Trail, Nankin, Mich.

Abco Building Co., 8012 Randy Dr., Nankin, Mich. CA Est. $650,000. 50 brick HOUSES, Randy Drive, NANKIN, MICH. Kent Realty Co. (agent), 8012 Randy Drive, Nankin, Mich.

▲ **Taines-Mony & Simons,** 29822 Ann Arbor Trail, Nankin, Mich. CA Est. $1,100,000. 75 brick ranch HOMES, Middlebelt and Joy Sts., NANKIN, MICH. Stieber Realty Co., agent, 4650 Chene St., Detroit, Mich.

▲ **Hy. Standard Builders,** 19469 James Couzens Hy., Detroit 35, Mich. CA Est. $4,400,000. Hawthorne Meadows development, 300 brick ranch HOMES, NANKIN, MICH. Northwest Management Co., 14801 Meyers Rd., Detroit, Mich.

▲ **Alex Gordon (builder),** 12070 Greenfield St., Detroit 27, Mich. Owner Builds. $2,500,000. HOUSING DEVELOPMENT, 43 acres, Nine Mile Rd., west of Telegraph, SOUTHFIELD, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 7 Iowa March 20 Oklahoma-Texas
STREETS AND ROADS
February 7 Iowa February 9 Kansas

† **Tex., Fort Worth**—COMMUNICATIONS BLDG.—BA 2/16—U. S. Eng., 100 W. Vickery Blvd., communications bldg. addn., Carswell Air Force Base, ENG-41-443-56-57. CD 2/1/51.

† **Tex., Ozona**—A.C. & W. FACILITY—BA 2/20—U. S Eng., 100 W. Vickery Blvd., Fort Worth, A.C. and W. Facility, Ozona TM-193, ENG-41-443-56-61. Extended date. CD 1/4.

† **Wyo., Sheridan**—STEAM DISTRIBUTION SYSTEM—BA 2/28—Veterans Admin., Munitions Bldg., Wash., D. C., steam distr. sys., Veterans Admin. Hospital. Extended date. CD 1/18.

† **Mont., Great Falls**—PROFICIENCY TRAINING BLDG.—BA 2/29—U. S. Eng., City-County Airport, Walla Walla, Wash., 11,500 sq. ft., rein.-con., masonry proficiency training bldg., Malmstrom Air Force Base, ENG-45-164-56-32. Plans deposit $100.

BUILDINGS—BA

▲ **Minn., Mankato**—GYMNASIUM-AUDITORIUM—BA 2/8—St. Peter & St. Paul School, Rev. C. DuMuth, S.J., Mankato, gymnasium and auditorium, $1,000,000. Plans deposit $30. A. J. Ross & Assoc., Mankato, archts.

Tex., Houston—BUILDING—BA 2/9—Miller Investment Co., c/o Cameron Fairchild & Assocs., archts., 2626 W. Dallas Ave., 7 story, 35,000 sq. ft. masonry Barristers Bldg. $500,000. Extended date Walter P. Moore, 2 Pinedale St., engr. CD 1/4.

Minn., Sherburn—SCHOOL—BA 2/23—Bd. Educ., Mrs. Marie Eisenmenger, clk., high school, remodel present high school into elementary school. $900,000. Plans deposit $30. Swanson, Matson & Wegleitner, 500 Sexton Bldg., Minneapolis, archts. CD 5/24.

▲† **Colo., Camp Carson**—HOUSING—BA On Or About 3/20—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., 200 housing units for enlisted men; 11 housing units for field grade and general officers, grading, drainage structures, streets, drives, parking areas, walks, etc., and utilities, ENG-25-066-5645. CD 1/24.

BUILDINGS—SLC

Minn., Minneapolis—SCHOOL—Breck School, R. L. Anderson, bldg. chn., Como Ave. and Eustis St., St. Paul, soon lets contract 2 story bsmnt., school East River Rd. and 42 St. $700,000. M. & G. Buetow, 1931 University Ave., St. Paul, archts. CD 10/14.

HEAVY CONSTRUCTION—LB & CA

▲ **MISSOURI**—State Hy. Dpt., Jefferson City, **Samuel Kraus Co. & Auxvasse Stone & Gravel Co.,** 645 Edmund Ave., St. Louis 10, Mo. CA $1,416,708. 14 steel plate girder spans total 1,391 ft., St. Louis City; CA $160,085. one 60 ft., two 44 ft., concrete girder spans, St. Louis City; CA $96,794. 54 ft. concrete rigid frame, St. Louis City. Grand total $1,673,542. Bids Jan. 5, awarded Jan. 21. CD 1/11, under LB.

MISSOURI—State Hy. Dpt., Jefferson City, **Samuel Kraus Co. & Auxvasse Stone & Gravel Co.,** 645 Edmund Ave., St. Louis 10, Mo. CA $803,105. c. conc. 0.8 mi. St. Louis City. Bids Jan. 5, awarded Jan. 21. CD 1/11, under LB.

MISSOURI—State Hy. Dpt., Jefferson City, **Atkinson Windle Co.,** Chillicothe, Mo. CA $506,161. c. conc. 5.664 mi. Livingston Co. Bids Jan. 5, awarded Jan. 19. CD 1/11, under LB.

† **Bishop Constr. Co.,** 3314 Roanoke Rd., Kansas City, Mo., CA, $506,900. library, service club, A.I.E. shop and commissary, IFB 56-29, SEDALIA, MO. U. S. Eng., Federal Office Bldg., Kansas City, Mo. Bids Oct. 25. CD 11/1, under LB.

† **Crawford Electric Co.,** 121 W. 8th St., North Platte, Neb., LB $710,659 (10 bidders) labor and materials for Fargo-Grand Forks 115-kv transmission lines, Cass, Traill and Grand Forks Counties, N. D. and Polk Co., Minn., Spec. DC 4589, NORTH DAKOTA-MINNESOTA. Bureau Reclamation, Dpt. Interior, P.O. Box 1993, Fargo, N. D. Bids Jan. 17. CD 12/14.

† **Eugene Luhr & Co.,** Columbia, Ill., CA $510,810, levee for Williston protection works, Garrison Dam and Reservoir Proj., Williston, Inv. 32-015-56-31, NORTH DAKOTA. U. S. Eng., Riverdale, N .D. Bids Dec. 13. CD 12/27, under LB.

▲† **Fred R. Combs Co.,** 2901 Aldrich Ave. S., Minneapolis, Minn., LB $1,844,110, buildings operational, Grand Forks Air Force Base, ENG-24-066-56-42, GRAND FORKS, N. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 24. CD 12/29.

† **Joseph A. Bass Co.,** Sexton Bldg., Minneapolis, Minn. LB $593,700, Schedule I; LB $588,200, Schedule Ia, Group 4 buildings, Minot Air Force Base, Inv. 25-066-56-21, MINOT, N. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 19. CD 12/27.

† **Peter Kiewit Sons Co.,** 1024 Omaha Natl. Bank Bldg., Omaha, Neb., LB $927,407, airfield paving and grading, Minot Air Force Base, Inv. 25-066-56-34, MINOT, N. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 20. CD 1/4.

† **M. A. Garland,** 2202 S. 8 St., Rapid City, S. D. LB $581,068. parachute and dinghy repair shop, Ellsworth Air Force Base, Inv. 25-066-56-24, RAPID CITY, S. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 19. CD 12/21.

Knox Constr. Co., Tekamah, Neb., CA $562,970, 65 mi. 161 kv rural distr. line from Lincoln to Omaha substation, incl. steel towers, NEBRASKA. Loup River Public Power Dist., Columbus, Neb. Bids Dec. 15. CD 12/7.

Fairbanks-Morse & Co., 902 Harney St., Omaha, Neb., LB $134,990, power plant building addn. and generating equip., DESHLER, NEB. City, Deshler, Neb. Bids Jan. 19. CD 1/9.

▲ **Brown Electric Co.,** 117 S. Main St., Wichita, Kan. LB $1,105,540, est. $1,209,005 ramp addns., electrical section 1, WICHITA, KAN. Boeing Airplane Co., Plant No. II, Personnel Bldg., Wichita, Kan. Bids Jan. 19. CD 1/11.

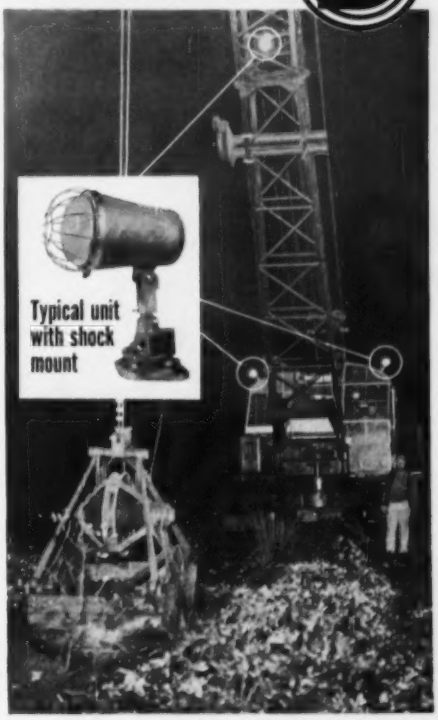
▲ **Pipe Line Service Co.,** Seminole, Okla., CA $7,100,000. 140 mi. 24 in. crude line from point in Garvin Co. to Tulsa, OKLAHOMA. Transok Pipe Line Co., Public Service Bldg., Box 887, Tulsa, Okla.

▲ **TEXAS**—Texas Turnpike Auth., 214 First Federal Savings Bldg., Austin,
Cage Brothers, 6959 San Pedro St., San Antonio, Tex. CA **$1,016,848.** continuous rolled beam and concrete girder bridges, Proj. D-FW 44, Tarrant Co. Bids Jan. 10, awarded Jan. 18. CD 1/16, under LB.
TEXAS—Texas Turnpike Auth., 214 First Federal Savings Bldg., Austin,
Texas Bitulithic Co., P. O. Box 10365, Dallas, Tex. CA **$522,360,** Proj. D-FW 45, continuous rolled beam and plate girder bridges at Hale Cement Spur R. R., Westmoreland Rd., Edgefield Ave. and Sylvan Ave., Dallas Co. Bids Jan. 11, awarded Jan. 18. CD 1/17, under LB.
TEXAS—State Hy. Comn., Austin,
Williams Bros. Constr. Co., 3311 Montrose Blvd., Houston, Tex., CA **$900,449,** 1.681 mi. San Jacinto River Bridges and approaches, grading, structures, flexible base, b. conc. pavement Hy. US 75. Proj. IN 370 (11), Montgomery Co. Bids Jan. 11, awarded Jan. 18. CD 1/17, under LB.
▲ **TEXAS**—State Hy. Comn., Austin,
Tex.—Norman L. Larson, Dean Skinner, Contr. & C. H. Harrison Co., P. O. Box 5216, Austin, Tex., CA **$1,335,532,** grading, structures 15.2 mi. Hy. US 67. Proj. IN 800 (10), Hunt Co.;
Tex.—Texas Bitulithic Co., P. O. Box 10365, Dallas, Tex., CA **$1,967,247,** c. conc. 5.211 mi. Hy. US 77. Proj. IN 22 (8), Dallas Co.;
Tex.—C. Hunter Strain & Harry Newton, Inc., P. O. Drawer 2631, San Angelo, Tex., CA **$598,251,** grading, structures 8.638 mi. Hy. FM 2272, Proj. S 2009 (2), etc. Armstrong Co. Grand total $3,901,030. Bids Jan. 10, awarded Jan. 18. CD 1/16, under LB.
▲ **TEXAS**—State Hy. Comn., Austin,
Tex.—Allen M. Campbell Co. Gen. Constr., P. O. Box 836, Tyler, Tex., CA **$1,030,189,** flexible base, hot mix b. conc. 10.748 mi. Hy. US 190 and ST. 63. Proj. F 930 (8), Jasper Co.;
Tex.—W. S. Crawford Co. & R. N. Adams, 5350 Montrose Dr., Dallas, Tex., CA **$566,653,** flexible base, b. conc. 4.502 mi. Hy. US 175, etc. Proj. F 136 (12), etc. Kaufman Co.; CA **$674,561,** grading, structures, roadbed tr. 3.92 mi. Hy. US 77. Proj. FI 117 (10), Denton Co.;
Tex.—L. H. Lacy Co., 5630 Yale Blvd., Dallas, Tex. CA **$717,813,** grading, storm sewers, grade separation, 2.269 mi. Hy. US 175, etc. Proj. U 860 (11), Dallas Co.;
Tex.—Holland Page, P. O. Box 1181, Austin, Tex. CA **$608,484,** flexible base, two course surf. tr. 15.638 mi. Hy. SH 29 and US 83. Proj. S 2080 (1), Menard Co.;
Tex.—Trotti & Thompson, Inc., P. O. Box 70, Beaumont, Tex., CA **$1,667,127.** c. conc. 2.473 mi. Hy. US 90. Proj. UI 56 (12), Jefferson Co.;
Tex.—Worrell & Watkins and Border Constr. Co., Rte. 8, Box 166-A, Dallas, Tex., CA **$503,316,** flexible base, b. conc. 6.716 mi. Hy. US 290. Proj. F 177 (2), etc., Hays and Travis Counties. Grand total $5,768,143. Bids Jan. 11, awarded Jan. 18. CD 1/17, under LB.
▲† **H. B. Zachary Co.,** P.O. Box 10188, San Antonio, Tex., LB **$1,467,655,** est. $1,555,774. runway exten. and industrial waste treatment plant, ENG-41-443-56-55, ABILENE, TEX. U. S. Eng., Box 1600, Fort Worth, Tex. Bids Jan. 24. CD 1/5.
Cato Corp., 9747 Harry Hines Blvd., Dallas, Tex. Own Forces. **$76,975,** natural gas lines, FARMERS BRANCH, TEX. CD 12/2.
† **U. S. Eng.,** City-County Airport, Walla Walla, Wash. cancelled bids to have been opened Jan. 27, rocket storage, check-out and assembly bldg. addn. to ammo storage and shop bldg., Malmstrom Air Force Base, ENG-45-164-56-25, GREAT FALLS, MONT. CD 12/29.

BUILDINGS—LB & CA

Hurley Constr. Co., 403 S. Robert St., St. Paul, Minn. CA **$600,000.** general contract redevelopment of COMMERCIAL DISTRICT, Lake St. between 21 and Hiawatha Aves., MINNEAPOLIS, MINN. Signal Hills Co., J. Asfeld, pres., 403 S. Robert St., St. Paul, Minn. CD 12/22.
▲ **Wigton-Abbott Corp.,** 1225 South Ave., Plainfield, N. J., CA **$1,000,000,** 100,000 sq. ft. concrete FACTORY, BURLINGTON, IOWA. Champion Spark Plug Co., (Iowa Industries) 900 Upton Ave., Toledo, O. CD 1/6.
Citywide Building Co., Elliott and Brentwood Sts., Council Bluffs, Iowa, Owner Builds, **$600,000.** 50 DWELLINGS, COUNCIL BLUFFS, IOWA.
Ulhorn Constr. Co., Harlingen, Tex., CA **$585,000.** cotton storage WAREHOUSE and COMPRESS, BROWNSVILLE, TEX. Cook & Co. and Gulfside Warehouse Co., Inc., 1127 E. Levee St., Brownsville, Tex. CD 1/20.
C. E. Fritch, Contr., 2108 Hawes St., Dallas, Tex., CA **$605,631.** W. W. Bushman SCHOOL, DALLAS, TEX. Dallas Independent School Dist., 3700 Ross St., Dallas, Tex. Bids Jan. 10. CD 1/3.
† **Steinberg & Son,** 2111 S. Harwood St., Dallas, Tex. CA **$305,103,** 400-man USAR CENTER, Lancaster and Kingsley Sts., ENG-41-443-56-49, DALLAS, TEX. U. S. Eng., 100 W. Vickery Blvd., Fort Worth, Tex. Bids Dec. 20. CD 12/29, under LB.
▲† **C. H. Leavell & Co.,** 1900 Wyoming St., El Paso, Tex. CA **$2,576,267,** constr. 200 unit NCO family HOUSING, Fort Bliss, ENG-29-005-56-49, EL PASO, TEX. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Dec. 28. CD 1/5, under LB.
J. E. Morgan & Sons, 215 Willow St., El Paso, Tex. Own Forces. **$750,000.** INSPECTION BLDG., EL PASO, TEX. CD 1/20.

CIRCLE D Now offers



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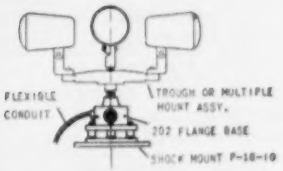
Floodlamps mounted on cranes, draglines, pile drivers, and similar equipment give much longer life with the new CIRCLE D vibration shock mount. This unit protects lamps two ways. The CIRCLE D shock-absorbing spring socket and silicone cushion gasket support the lamp itself, and the whole unit is further insulated against vibration by a new steel-enclosed shock mount with neoprene supports. Available in single or cluster units. Pays for itself in a short time by savings in lamp replacement.



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▲ **Memorial Professional Bldg., a/o** 2508 Richton St., Houston, Tex., cancelled bids to have been opened Feb. 7, 13 story, bsmnt. DOCTORS BLDG., HOUSTON, TEX. **$3,800,000.** Will re-advertise. CD 1/11.

Connell Constr. Co., 2110 Hawes St., Dallas, Tex. LB **$597,634,** HIGH SCHOOL, IRVING, TEX. Irving Independent School Dist., Irving, Tex. Wyatt C. Hedrick, 904 S. Fort Worth Ave., Dallas, Tex., archt. Bids Jan. 17. CD 12/30.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

February 23 California

STREETS AND ROADS

February 23, 24 California

Wash., Ephrata—BA 2/15—City, City Hall, rein.-con. pump station with chlorinating equip. 2,365 ft. 4- to 12-in. pipe line. $44,500. Plans deposit $25. Gray & Osborne, 228 S. 2 St., Yakima, engrs.

Wash., Ephrata—BA 2/15—City, City Hall, sewage lift station, 1,800 ft. 6- to 10-in. trunk sewers, $266,000. Plans deposit $25. Gray & Osborne, 228 S. 2 St., Yakima, engrs. CD 11/1.

† **Calif., El Toro**—FACILITY, etc.—BA 2/17—Eleventh Naval Dist., San Diego, special weapons facility, NOY 90791, Spec. 49468, $300,000, Plans deposit $30; taxiway, NOY 90790, Spec. 49467, $150,000, both at Marine Corp. Air Station. CD 12/20.

▲ **Calif., Los Angeles**—BA 2/17—Los Angeles County Flood Control Dist., 2250 Alcazar St., Proj. 70, Slauson Ave. storm drain sys., Section 6, $1,500,000. H. E. Hedger, c/o owner, engr. CD 11/7/52.

† **Arizona-California**—BA 3/6—Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver 2, Colo. furnishing three 50 ft. x 24.91 ft. radial gates for Palo Verde Diversion Dam, Palo Verde Diversion Proj., Inv. DS-4618; adv. ENR 2/2. CD 9/21/44.

BUILDINGS—BA

Wash., Bellevue—SCHOOL ADDNS.—BA 2/9—School Dist. 405, Bellevue, 36,000 sq. ft. frame High School addns. $447,000. Plans deposit $50. Naramore, Bain, Brady & Johanson, 904 7 Ave. Seattle, archts. CD 1/20.

Calif., Apple Valley—SCHOOL ADDNS.—BA 2/10—Apple Valley School Dist., Apple Valley, Apple Valley School addns. $350,000. H. L. Gogerty, 3123 W. 8 St., Los Angeles, archt.

Wash., East Wenatchee—SCHOOL ADDNS.—BA 2/15—Eastmont School Dist. 206, East Wenatchee high school addns. $615,000. Plans deposit $25. W. H. Rothe, 807 W. Yakima Ave., Yakima, archt. CD 11/29.

Calif., Temple City—SCHOOL—BA 2/17—Temple City Unified School Dist., 9516 E. Longden Ave., reinforced brick Temple City High School Bldgs. $350,000. Smith, Powell & Morgridge, 208 W. 8 St., Los Angeles, archts. CD 6/25/54.

BUILDINGS—SLC

▲ **Calif., Riverla**—Plant—Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., soon lets contract 1,300,000 sq. ft. Lincoln-Mercury Plant. **$1,300,000.** CD 1/9.

HEAVY CONSTRUCTION—LB & CA

NEVADA—Directors, Dpt Hys., State Office Bldg., Carson City,

Young & Smith Constr. Co., Beacon Bldg., Salt Lake City, Utah, CA **$658,262,** constr. portion of state hy. sys., between 24 mi. west and junction with State Rt. 38, 4 mi. south of Hiko, F.A.S. Rte 802, Control Sect. LI-13. Proj. No. S-802 (1). State Hy. Contr. No. 949, Lincoln Co. Bids Jan. 19. CD 1/5.

▲† **C. H. Leavell & Co.,** 1900 Wyoming St., El Paso, Tex. and **Utah Constr. Co.,** 100 Bush St., San Francisco, Calif., CA **$1,033,745.** two enlisted men's barracks, recreation bldg., various aviation facilities, Naval Auxiliary Air Station, NOY 91688, Spec. 50102, FALLON, NEV. Dist. P. Wks. Office, 12th Naval Dist., San Bruno, Calif. Bids Dec. 28, awarded Jan. 18. CD 1/5, under LB.

† **Purch. & Contg. Officer,** Dpt. Army, Fort Lewis, Wash., cancelled bids to have been opened Jan. 20, surfacing 16.5 mi. roads and concrete headwalls, Yakima Firing Center, Inv. 56-72, YAKIMA, WASH. CD 12/29.

CALIFORNIA—State Div. Hys., 120 S. Spring St., Los Angeles,

Oberg Bros. Constr. Co., 401 W. Florence Ave., Inglewood, Calif., CA **$910,694** rein.-con. 1 welded steel girder bridge and grading, paving sewer construct. U. S. 101 between Los Angeles and 0.2 mi. west of Vineland Ave., Los Angeles Co. Bids Jan. 12, awarded Jan. 23. CD 1/18, under LB.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,

Calif.—**A. Teichert & Son, Inc.,** 1931 Stockton Blvd., Sacramento, Calif., LB, **$914,045** (7 bidders) two 37 ft. roadbed to provide 4-lane divided hy. separated by 36 ft. median on U. S. 99 for 2.5 mi. between 0.3 mi. north of Lathrop Rd. and 0.4 mi. north of Turner Station, parallel steel beam bridge for 28 ft. clear roadway on Turner Station overhead and frontage roads and ramps, San Joaquin Co.;

Calif.—**Baun Constr. Co.,** 3229 W. Dudley Ave., Fresno, Calif., LB, **$234,702** (7 bidders) 28 ft. roadbed 4 mi. Sign Rte. 140, Mariposa Co.;

Calif.—**Huntington Bros.,** Monticello Rd., Napa, Calif., LB, **$481,849** (6 bidders), grading, surf. 3.8 mi. Sign Rte. 29 and 128, Napa Co. Bids Jan. 16. CD 12/28.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,

Calif.—**Arthur B. Siri, Inc.,** 1357 Cleveland Ave., Santa Rosa, Calif., CA, **$539,310,** grading, surf. 5 mi. Sign Rte. 20 between 0.2 mi. east of North Fork of Colc Creek and Laurel D 11, Mendocino and Lake Counties;

Calif.—**Baldwin Contg. & H. Earl Parker, Inc.,** 12 and F. Sts., Marysville, Calif., CA, **$930,580,** grading, paving 3.7 mi. U. S. 99 E, remodeling portion of Marysville Bridge, ramps, frontage roads, speed change lane, Yuba Co. Bids Jan. 11, awarded Jan. 20. CD 1/18, under LB.

† **Allan Associates,** 3415 W. 8 St., Los Angeles, Calif., CA **$743,497,** est. $750,000. tactical and administration facilities AAA Sites, LA-57C, LA-57-L, Los Angeles Co., CIVENG-04-353-56-41, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Nov. 9, awarded Nov. 19. CD 10/28.

† **Ray Wilson Co.,** 2960 Marsh St., Los Angeles, Calif., LB, **$948,966,** est. $1,000,000. facilities for AAA sites, LA-88-C and LA-88-L, ENG-04-353-56-70, CALIFORNIA. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 20. CD 1/4.

▲† **Herbert E. Ellis,** Box 146, Station A, Berkeley, Calif., CA, **$1,053,461.** San Francisco Defense Area, SF 08-C & L, San Pablo Ridge near Orinda, Contra Costa Co., ENG-56-26, CALIFORNIA. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Bids Dec. 13. CD 1/3, under LB.

M. R. Fisher, 1124 S. Beverly Dr., Los Angeles, Calif., LB, **$508,900,** Sunset Reservoir, BEVERLY HILLS, CALIF. City, City Hall, Beverly Hills, Calif. Bids Jan. 17. CD 12/21.

Byerts & Sons, 915 S. Citrus Ave., Los Angeles, Calif., CA, **$594,104,** est. $450,000, railroad grade separation, Los Feliz Blvd., LOS ANGELES, CALIF. City, City Hall, Los Angeles, Calif. Bids Dec. 21. CD 1/5, under LB.

† **Stolte, Inc.,** 8451 San Leandro Ave., Oakland, Calif., LB, **$770,078,** est. $700,000 (7 bidders) airmen's club and NCO club, ENG-04-353-56-57, MARCH AIR FORCE BASE, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 19.

▲† **P. C. Bateson Constr. Co.,** 6800 Benton Dr., Dallas, Tex., CA, **$2,072,308,** est. $1,750,000. base maintenance hangar, Edwards Air Force Base, ENG-04-353-56-30, MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 5. CD 1/9, under LB.

▲† **Robert E. McKee Co.,** P. O. Box 350, Glendale, Calif., CA, **$2,438,154,** maintenance hangar, fire stations, fire protection sys., McClellan Air Force Base, ENG-56-30, SACRAMENTO, CALIF. U. S. Eng., 1209 B St., Sacramento, Calif. Bids Jan. 12. CD 1/20, under LB.

BUILDINGS—LB & CA

▲ **Vinnell Co., Inc.,** 1145 Westminister St., Alhambra, Calif., LB **$8,000,000.** 2 story, with 6 story tower, 250,000 sq. ft. ENGINEERING CENTER and other facilities, HAWTHORNE, CALIF. Northrop Aircraft Inc., 1001 E. Broadway, Hawthorne, Calif. Pereira & Luckman, 9220 Sunset Blvd., Los Angeles, archts.

Stiglbauer Bros., 8148 E. Phlox St., Downey, Calif., LB **$385,600,** (6 bidders) rein.-con. JUNIOR HIGH SCHOOL addns., MONTEBELLO, CALIF. Montebello Unified School Dist., 1600 Whittier Blvd., Montebello, Calif. Bids Jan. 19. CD 1/4.

▲ **Swinerton & Walberg Co.,** 200 Bush St., San Francisco, Calif., CA, **$1,000 000,** synthetic Latex PLANT, PITTSBURG, CALIF. Dow Chemical Co., Midland, Mich. CD 1/23.

▲ **Dinwiddie Constr. Co.,** 620 Market St., San Francisco, Calif. CA, **$6,000,000.** 3 story 235,000 sq. ft., rein.-con. DEPARTMENT STORE, with 1,800 car parking lot, SAN JOSE, CALIF. The Emporium Capwell Co., 835 Market St., San Francisco, Calif. Welton Beckett, 173 Malden Lane, San Francisco, Calif., archt.

Allison Honer Co., 312 N. Main St., Santa Ana, Calif., CA **$780,000,** brick, concrete steel OFFICE, 1750 E. 4 St., SANTA ANA, CALIF. All State Insurance, Skokie, Ill.

▲ **Martell Builders,** 14320 S. Central Ave., Los Angeles, Calif. Owner Builds. **$2,880,000.** 311 frame, stucco DWELLINGS, Abbywood Ave., Noys and Rideau Sts., WHITTIER, CALIF.

CANADA

BUILDINGS—BA

Ont., **Ottawa**—RESEARCH LABORATORY—BA 2/10—Eldorado Mining & Refining Ltd., No. 4 Bldg., Ottawa, Ont., research laboratory Tunney's Pasture Public Works Development. $600,000. Plans deposit $100, Meadowcroft & MacKay, 4115 Sherbrooke St. W., Montreal, Que., archts. CD 7/1/52.

▲ **Ont., Kitchener**—HOME FOR AGED—BA 2/22—Waterloo County Home for the Aged, County Bldgs., 200 Weber St., X-shaped, 90,000 sq. ft.. 1 and 2 story concrete, steel frame, masonry walls, brick, Home for the Aged. $1,125,000. Plans deposit $100. Jenkins & Wright, 233 Queen St. W., archts. R. D. McCarger, 81 Melbourne St., Waterloo, engr. CD 1/10.

B. C., Campbell River—HOSPITAL—BA 2/27—Campbell River General Hospital, Campbell River, 3 story, bsmnt. 62-bed rein.-con. hospital. Plans deposit $100. Underwood, McKinley, Cameron, 1264 W. Pender St., Vancouver, archts. CD 1/11.

HEAVY CONSTRUCTION—LB & CA

BRITISH COLUMBIA—B. C. Govt., Parliament Bldgs., Victoria,

W. C. Arnett & Co. Ltd., Sicamous, B. C., LB **$368,685,** Proj. 674, work on Okanagan Hy. from Oyama to North Boundary, N. M. McCallum, Parliament Bldgs., Victoria, engr.

Perth County Council, Stratford, Ont., Own Forces, $165,000 road construction, $200,000 maintenance of roads, STRATFORD, ONT. J. A. Coombs, County Bldgs. Stratford, Ont., engr. Awarded Jan. 23.

BUILDINGS—LB & CA

Christensen & MacDonald Ltd., 612 Tegler Bldg. and **Bird Constr. Co. Ltd.,** 12525 127 Ave., both Edmonton, Alta., LB, **$966,666** (10 bidders) Two identical low bids. KITCHEN and CAFETERIA for hospital, EDMONTON, ALTA. Royal Alexandra Hospital Bd., Edmonton, Alta. Bids Jan. 16. CD 1/5.

▲ **Bennett & White Constr. Co. Ltd.,** 660 Howe St., Vancouver, B. C., CA **$1,466,391.** 2 story, rein.-con. Killarney Junior-Senior High SCHOOL, 49 and Killarney Sts., VANCOUVER, B. C. Vancouver School Bd., 1595 W. 10 Ave., Vancouver, B. C. Bids Dec. 29, awarded Jan. 20. CD 1/13, under LB.

Key Constr. Ltd., 1040 Bleury St., and **Deschamps & Belanger Ltd.,** 6931 Cote des Neiges Rd., both Montreal, Que., CA, **$572,492** hydraulics LABORATORY, Ville La Salle, MONTREAL, QUE. St. Lawrence Seaway Auth., Temporary Bldg. No. 2, Ottawa, Ont. Bids Jan. 12, awarded Jan. 17.

▲ **Quemont Constr., Inc.,** 285 Bernard Ave. W., Montreal, Que., CA, **$1,046,000.** 2 story, bsmnt. HIGH SCHOOL, MONTREAL, QUE. Montreal Catholic School Comn., 117 St. Catherine St. W., Montreal, Que. Bids Dec. 20, awarded Jan. 16. CD 1/4, under LB.

▲ **Beaudet & Son,** 877 Charest Blvd. E., Quebec City, Que., LB, **$1,057,600** substructure for 1 story, 200x450 ft., frame, CUSTOMS and IMMIGRATION Bldg., rein.-con. fdn., Wolfe's Cove, QUEBEC CITY, QUE. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids Jan. 18. CD 12/20.

ALASKA

HEAVY CONSTRUCTION—BA

▲† **Alaska, Adak**—DIRECTION FINDER—BA 3/8—P. Wks. Officer, 17th Naval Dist., 908 7th Ave., Seattle, Wash., direction finder facility, Spec. 37596. $1,000,000. Plans deposit $75.

BUILDINGS—BA

▲† **Alaska, Adak**—HOUSING—BA 3/8—P. Wks. Officer, 17th Naval Dist., 908 7th Ave., Seattle, Wash., 71 unit family housing, $1,000,000. Spec. 37595. Plans deposit $75. CD 10/14.

▲† **Alaska, Kodiak**—HOUSING—BA 3/13—P. Wks. Officer, 17th Naval Dist., 908 7th Ave., Seattle, Wash., 80 units, family housing, Kodiak Naval Station, Spec. 37597. $1,000,000. Plans deposit $50. CD 10/14.

PUERTO RICO

HEAVY CONSTRUCTION—LB & CA

▲† **Rodriguez y Del Valle, Inc.,** Box 2889, 17½ Edif Victory Pa, San Juan, Puerto Rico, LB **$1,419,046,** communications facilities, Ramey Air Force Base, ENG-08-123-56-14, AGUADILLA, PUERTO RICO, U. S. Eng., P. O. Box 4970, Jacksonville, Fla. Bids Jan. 12.

LATIN AMERICA

HEAVY CONSTRUCTION—BA

▲ **El Salvador**—BA 2/20—The Comision Ejecutiva del Puerto de Acajutla (CEPA), Edificio Regalado, 2a Avenida Sur, No. 15, San Salvador, Acajutla Port constr. proj. Est. $5,000,000-$6,000,000. Plans deposit $100. CD 12/1.

HEAVY CONSTRUCTION—LB & CA

▲ **GUATEMALA**—Bureau P. Rds., Dpt. Commerce, Inter-American Hy. Program, 18 and F Sts., N.W. Wash. 25, D. C.,

Guatemala—**Thompson-Cornwall, Inc.,** Chrysler Bldg., New York, N. Y., U. S. A., LB **$3,196,809** (8 bidders) Proj. 19;

Guatemala—**Fisher Contg. Co.,** 2201 S. 19th Ave., Phoenix, Ariz., U. S. A., LB **$2,357,749** (7 bidders) Proj. 20 for grade, drain, etc. between Los Encuentros and San Cristobal and between San Francisco Alto and Chiquival, Bids Jan. 25. CD 12/14.

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

E. B. Badger & Sons, Ltd., London, England, and Pasadena, Tex., U. S. A. CA two 80,000 b/sd atmospheric crude units and gasoline stabilizers at Mina Al Ahmandi, KUWAIT. Kuwait Oil Co., Kuwait. Bechtel International Corp., 612 S. Flower St., Los Angeles, Calif., U. S. A., and Wimpey & Co. Ltd., London, England, engrs.

FOREIGN

HEAVY CONSTRUCTION—BA

Egypt, Alexandria—SHIPYARD—BA 4/15—National Production Council, Cairo, shipyard, dry dock and naval arsenal.

(Proposal Advertisements see p. 97 to 100)

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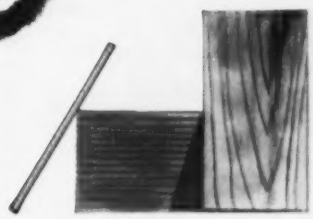
"Can't get this dad-burned sliver o' wood to burn," rumbled Paul Bunyan to Babe, the Blue Ox. A mountain top trembled and fell, damming up a river. "Babe, what the cuss do you suppose them Baxter folks done to this here piece o' plywood? ✱ She's dry—but she JEST DON'T BURN!"



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(Pressure treated with Protexol)

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Unit Prices

Carquinez Bridge Prices

Following up the highlights on the (Carquinez Bridge bidding that ENR reported December 15, page 45, here are the complete unit prices on the sub- and superstructure and interchange. These three contracts total $19.6 million as awarded by California Toll Bridge Authority.

This is a welded and bolted steel bridge. It has two main 1,100-ft cantilever spans, two 500-ft side spans and a 150-ft mid. The open caissons have to be 100 ft deep.

Substructure

1C Mason & Hanger—Silas Mason Co., Inc.—F. S. Rolandi, Jr., Inc., San Francisco ... $5,454,694
2 Ben C. Gerwick, Inc., Morrison-Knudsen Co., Inc., MacDonald, Young & Nelson, Inc., San Francisco ... $5,578,845
5 Peter Kiewit Sons' Co., Judson Pacific-Murphy Corp, Fred J. Early, Jr., Co., Inc., Stolte, Inc., Emeryville ... $6,220,318

Bids: 11-29-55 Items:	Unit	Quantity	Unit Prices 1 C	2
Conc, remov	cy	24	$150.00	$150.00
Excav, struct, Abtmt 1	cy	2,440	8.55	3.00
piers 4 & 5	cy	9,398	10.30	28.00
Bkfl, struct, Abtmt 1	cy	370	10.40	6.00
Caisson work, Piers 2, 3A & 3B	cy	78,004	40.29	37.60
additional	cy	3,000	15.00	30.00
Conc, cl A, struct	cy	15,980	45.00	50.00
seal, Piers 2, 3A, 3B	cy	10,800	22.50	38.00
Pier 4	cy	2,520	22.00	45.00
Stl, reinf, bar	lb	1,343,000	0.135	0.11
Piles, creos timber, f	lf	7,180	2.00	2.50
drive	ea	181	139.00	100.00
stl, drive	ea	392	151.00	300.00
splices	ea	520	40.50	20.00
Stl caiss, conc fill, 24"	lf	8,215	55.60	43.00
Anchor & bits, str stl	lb	30,800	0.58	0.35
Timber, creosoted	Mfbm	325	368.00	400.00
Blanket, gravel	t	850	7.80	6.00
rock	t	23,600	5.85	6.00
Sand fill	t	1,790	6.00	7.00

Superstructure

1C American Bridge Div, United States Steel Corp., San Francisco ... $9,489,126
2 Judson Pacific Murphy-Early, Kiewit-Stolte ... $9,523,960
4 Bethlehem Pacific Coast Steel Corp., San Francisco ... $13,886,841

Bids: 11-30-55 Items:	Unit	Quantity	Unit Prices 1 C	2
Conc, cl A, struct	cy	130	$105.00	$71.61
deck	cy	1,130	73.00	57.44
lightweight	cy	3,226	84.00	65.23
Stl, reinf, bar	lb	970,000	0.1175	0.10
Struct stl	lb	12,680,000	0.2417	0.3091
low alloy	lb	10,740,000	0.2782	0.2315
T-1	lb	5,820,000	0.3476	0.3058
clean & paint	ls	job	735,000	786,480
Safety railing, met	lf	770	6.30	3.60
Platf, maint, trav	ls	job	174,000	104,000
Hy lighting sys	ls	job	2,400	1,786

Time to complete: 1,010, calendar days
Liquidated damages: $7,900 per day

Approaches and Interchange

1C Peter Kiewit Sons' Co., San Francisco ... $4,661,462
2 Walsh Construction Co. & J. H. Pomeroy & Co., Inc., San Francisco ... $4,843,449
11 Charles MacClosky Co., San Francisco ... $6,965,398

Bids: 12-1-55 Items:	Unit	Quantity	Unit Prices 1 C	2
Clear & grubb	ls	job	$46,000	$125,000
Wat sup, dev & equip, f	ls	job	2,500	40,000
apply	Mgal	13,500	1.80	1.40
Excav roadway	cy	390,000	0.76	0.65
struct	cy	15,500	2.20	3.00
trench	cy	13,200	0.80	0.65
Bkfl, struct	cy	9,900	5.00	2.50
Overhaul	stay	3,000,000	0.003	0.01
Borrow matl, local	t	41,900	0.70	0.80
Portland cmt	bbl	2,230	5.20	5.00
Base, cmt treat, mix, spread & compact	sy	29,500	0.25	0.25
Asphaltic emulsion	t	43	40.00	47.00
Aggregate, mineral	t	5,400	7.00	8.00
Asph, paving	t	270	30.00	8.00
Conc, cl A, struct	cy	18,985	45.00	51.00
lightweight	cy	7,000	70.00	70.00
cl B	cy	1,000	35.00	35.00
Watersteps, rubber	lf	310	2.00	2.00
Bridge rail, tub girder	lf	1,100	3.00	3.00
Bridge rail, conc	lf	1,100	3.00	3.00
Bridge rail, tub girder	lf	1,100	3.00	3.00
Stl, reinf, bar	lb	4,103,000	0.11	0.09
Str stl	lb	3,496,000	0.17	0.16
low alloy	lb	5,028,000	0.18	0.20
clean & paint	ls	job	230,000	250,000
Iron & stl, misc	lb	25,100	0.30	0.50
Railing, met, safety	lf	10,545	5.00	4.00
met plate, guard	lf	440	4.00	5.00
Piles, stl, f	lf	27,400	7.00	7.00
drive	ea	965	50.00	55.00
splices	ea	200	25.00	40.00
Monuments, survey	ea	65	20.00	20.00
Pipe, sewer, VC, 6"	lf	1,340	16.00	3.00
plugs	ea	9	17.00	30.00
Manholes, san sewer	lf	82	38.00	35.00
frame & cov, salv	ea	14	30.00	30.00
i	ea	9	25.00	20.00
adjust to grade	ea	7	70.00	70.00
remov or clos	ea	6	31.00	60.00
Refltr units, horizontal	ea	7	7.00	10.00
Fence, chain link, 72"	lf	1,420	2.50	2.00
RCP, std stre, 12"	lf	2,650	3.00	5.00
18"	lf	1,810	4.30	7.00
24"	lf	628	7.00	10.00
30"	lf	650	8.00	12.00
36"	lf	468	12.00	14.00
48"	lf	1,000	17.00	21.00
60"	lf	72	26.00	33.00
CMP, 16 ga, 8"	lf	50	2.50	4.00
12"	lf	94	3.00	4.00
18"	lf	310	5.00	6.90
14 ga, 24"	lf	280	7.00	8.00
12 ga, 30"	lf	286	10.00	13.00
36"	lf	280	28.00	14.00
Underdr, PMP, 16 ga, 8"	lf	2,080	2.50	2.00
Pipe, welded stl, 10 ga, 6"	lf	1,550	3.50	3.00
Filter matl	t	12,600	3.30	4.00
Roadway, finish	ls	job	2,000	5,000
Traffic bars, raised	lf	210	2.00	2.00
Light sys & sgn illum	ls	job	26,400	23,500
Sign frame & std	ls	job	1,500	1,000
Bridge, detour	ls	job	51,000	25,000
Pipe handrailing	lf	150	8.00	5.00

Kentucky Junior High School

The 400-pupil Southern Junior High School for Owensboro, Kentucky, with 47,760 sq ft of floor space costs $458,885. This is $9.51 per sq ft (without surety bond).

The H-shaped one-story brick building houses class rooms, music, art and social studies, kitchen, cafeteria and offices. A 500-seat auditorium, the gymnasium, library and shops are in a separate wing. The design provides for future expansion.

Max Bisson and Ben Johnson of Owensboro are the architects. Contract went to Hartz and Kirkpatrick.

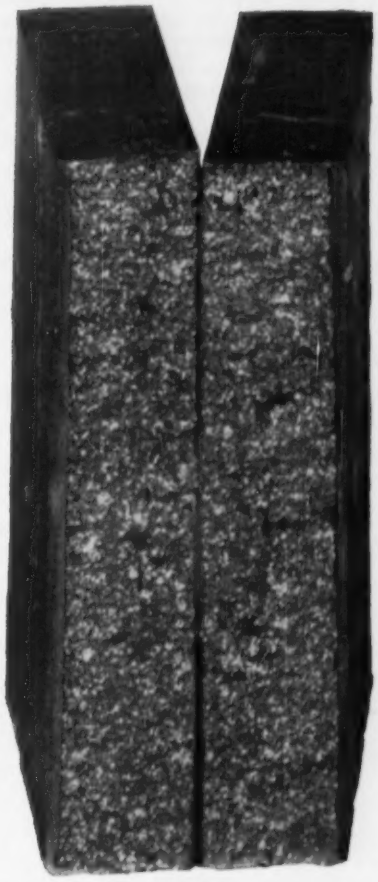
Fenestra type cellular steel panels with spans up to 30 ft and sound-proof Fibreglas batting in the interior provide a metal roof deck and finished acoustical ceiling.

The breakdown of costs shows:

Items of Cost	% of Total	Cost sq. ft.	Total
Grade, excav & backfill	0.86	$0.082	3,900
Conc work, fndn	5.44	0.517	24,700
slabs	3.30	0.314	15,000
Masonry work	18.38	1.748	83,500
Roof & sheet metal	5.40	0.513	24,500
Boards, chalk & cork	0.28	0.027	1,275
Joists, F & A	1.12	0.111	5,300
Roof deck, steel	14.69	1.397	66,700
Glass & glazing	0.69	0.065	3,100
Terrazzo & marble	0.27	0.025	1,200
Asphalt tile & base	1.32	0.126	6,000
Painting	1.92	0.182	8,700
Lumber & mill work	5.15	0.490	23,400
Carpentry & common labor	5.66	0.538	25,700
Utilities & caulking	0.22	0.021	1,000
Stl, iron, misc & erect	9.69	0.921	44,000
Plumbing & heating	17.31	1.646	78,643
Electrical work	7.60	0.722	34,495
Supervision	0.70	0.065	3,183
Total cost	100%	$9.51	$454,296
incl $4,589 performance bond			$458,885

HERE IS THE DIFFERENCE

WROUGHT IRON



STEEL

These are actual photographs of fractured pieces of wrought iron and steel. The picture at the left shows the fibrous structure of wrought iron. How this differs from the crystalline structure of steel is readily apparent. It is the presence of many thousands of tiny threads of glass-like iron silicate that gives wrought iron this unique fibrous structure and it is this structural feature, duplicated in no other metal, that gives wrought iron its superior resistance to corrosion and fatigue stresses.

While the initial cost may be higher, actual service records in numerous applications prove that wrought iron is the most economical buy because it lasts longer. Ask any Byers Field Service Engineer to show you fractured pieces, similar to those illustrated above. Write for our booklet, "The ABC's of Wrought Iron."

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BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY STEEL PRODUCTS

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Feb 9—Cement, Aggregate, Ready-mixed Concrete, Asphalt
- Feb 16—Iron and Steel Products, Pipe
- Feb 23—Wood Products, Glass, Explosives, Chemicals
- Mar 1—Clay Products, Lime, Plaster, Paint, Roofing

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft ½″	⅝″	GYPSUM BOARD LATH plain or perf per Msq ft ⅜″ x 16″ x 48″	GYPSUM SHEATHING tongue & groove per Msq ft ½″ x 2′ x 8′	FIBER BOARD SHEATHING asph impreg & coat per Msq ft ½″ sq ed	½″ T&G	FIBER BOARD INSULATION sq edge, paint per Msq ft ½″	MINERAL WOOL INSULATION† loose, per 40-lb bag a	3″ batts per M sf	GLASS FIBER INSULATION† loose, per 40-lb bag a	3″ batts per M sf	ALUMINUM FOIL 60# Kraft 1 side foil per roll of 250 s. f.	Expansible Blanket 2 layers foil per Msq.ft
Atlanta	$75.00	$65.00	$45.00	$75.00	$75.00	$125.00	$75.00	$1.08	$75.00	$1.45/	$85.00	.....	.....
Baltimore	49.25/	43.50/	51.30/	53.00/	65.00/	108.50/	69.00/	1.30	66.50	1.60	45.00	$4.00g	$33.50
Birmingham	79.00	65.00	51.11	82.00	73.50	124.00	72.50	1.40	70.00	1.60	75.00	3.39g	.....
Boston	56.00m	46.50m	53.00m	52.00m	64.00m	109.00m	70.00kn	1.45	75.00	1.40	56.00	5.80	54.50
Chicago	65.60	52.00	43.00	60.00	80.00	120.00	80.00	1.85	80.00	....	63/65kk	5.25r	.....
Cincinnati	46.40w	41.60w	30.80w	45.81w	65.00w	110.00w	65.00w	.....	61.00	1.25	75.00	2.81	50.00w
Cleveland	60.50	60.00	40.00	65.00	70.00	111.00	70.00	1.35/1.50	75.00	1.60**	61.50**	17.50	50/55
Dallas	58.00	55.00	42.50	65.00	73.50	122.50	70.00	1.90	65.00	1.35	65.83	4.25	.....
Denver	60.00	52.50	40.00	60.00	72.90	123.00	71.90	.....	71.00s	1.47	55.00	11.00r	21.00
Detroit	53.00	48.50	36.00	56.00	55.50	95.00	56.00	.....	.....	1.95b	77.25	.....	.....
Kansas City	65.00	55.00	40.00	65.00	72.00	120.00	75.00	1.40	80.00	1.40	80.00	11.24dd	19.44
Los Angeles	60.00	52.50	0.325x	60.00	71.87	121.25	80.00	.....	83.00	1.35a	64.00	4.20g	.....
Minneapolis	72.00	63.00	0.40x	80.00	70.00	114.00	70.00	1.30	78.00	1.30	78.00	6.50	.....
Montreal	60.00	52.00	36/39	53.00	60.00	.....	62.00	1.00	62.00	1.00	62.00	20.00e	80.00
New Orleans	70.00	60.00	45.00	65.00	67.50	125.00	75.00	1.95	68.00**	.....	.....	15.66	.....
New York	52.00	45.50	35.00	53.00	69.00	109.00	70.50	1.55	69.00	1.90	72.00	5.20	48.00cc
Philadelphia	50.00	48.00	34.00	48.50	67.50	105.00	49.20	.....	63/70	....	70/75	5.50/6	34.50/44.5
Pittsburgh	65.00	55.00	40.00	60.00	65.00	105.00	60.00	1.90	72.00	1.90	72.00	4.10	.....
St. Louis	65.00	55.00	40.00	65.00	75.00	120.00	70.00	1.80	85.00	1.65	69.00	4.75d	.....
San Francisco	52.00z	44.75	0.34z	56.00k	88.00	94.00	56.00	1.60	66.50	1.55	66.50	4.82	52.50
Seattle	57.50	50.50	40.00	50.00	71.40	120.35	70.20	1.75g	81.00	1.55aaz	62.00aa	4.25g	.....
Toronto	51.00	50.00	40.00	64.50	75.00	.....	.....	0.90	51.00	....	51.00	15.25e	39.50

*a for hand packing *b per 30# bag *c carloads *d 40# kraft paper *f full trailer loads *g 80# kraft paper backing *h LCL *i flameproof $75.00 *k plain core; asph core $56/M sq ft *m 10 ton quantities *n distributor's siding *o per Msf roll *p per sf *r per cwt *s per 35# bag *t per M sq ft *w fob city *x per sq. yd. *y 25# bag *z 32# bag *aa fob warehouse *bb 2″ *ee in 250 sf rolls, of 16″, 20″, or 24″ width.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Brick-layers	Car-penters	Struct. Iron Workers	Hoisting Engineers	Plas-terers	Electrical Workers	Steam-fitters	Common Labor Building	Common Labor Heavy Const.
Atlanta	$3.25	$2.70	$2.95	$2.70	$2.875	$3.00	$3.15d	$1.40	$1.40
Baltimore	3.20d	2.925f	3.325f	2.55/2.80Q	3.075f	3.075	3.075f	1.675f	1.675f
Birmingham	3.50	2.60	3.00k	2.42	2.82	3.175	3.125k	1.50	1.60
Boston	3.35r	2.925h	3.475k	3.40	3.45J	3.23R	3.30d	2.22Y	2.22Y
Chicago	3.625k	3.375r	3.50k	3.225m	3.70g	3.66j	3.44**	2.375k	2.375k
Cincinnati	3.45	3.15	3.275k	2.925/3.175	3.225	3.41N	3.445Z	2.20	2.10
Cleveland	3.475k	3.40	3.40k	3.40	3.40	3.425	3.40d	2.65	2.65
Dallas	3.025	2.875	2.95	2.95h	3.037	3.00	3.145Ab	1.50	1.50
Denver	3.50	2.975	2.975k	2.83	3.375k	3.60	3.20D	1.925	1.925
Detroit	3.58re	3.324q	3.475P	3.30ez	3.50ej	3.655H	3.524vee	2.35ez	2.35s
Kansas City	3.625	2.85	3.00	3.045	3.325	3.180	3.225k	2.105	2.13
Los Angeles	3.60	3.00d	3.325h	2.91d	3.75N	3.45	3.525d	2.275k	2.275k
Minneapolis	3.325	2.90	3.07	2.85	3.18Gs	3.20n	3.075k	2.15	2.15
New Orleans	3.175	2.60	2.975h	2.80	2.80	3.10k	3.10r	1.475	1.475
New York	4.18kr	3.73hJ	4.075p	3.99J	4.35A	3.66nF	3.978hL	2.70V	2.70V
Philadelphia	3.92t	3.30	3.73jM	3.17/3.92r	3.65C	3.80ns	3.615g	2.025	2.325
Pittsburgh	3.775k	3.275k	3.375k	3.425k	3.575k	3.50	3.50k	2.175k	2.08d
St. Louis	3.94r	3.325h	3.325k	3.325	3.80k	3.60r	3.66K	2.375k	2.375k
San Francisco	3.75r	3.16n	3.35s	2.90n	3.66s	3.425U	3.56K	2.275n	2.275n
Seattle	3.80d	3.00d	3.17d	3.00d	3.25d	3.295X	3.31T	2.47d	2.47d
Montreal*†	2.10	1.90	2.00	1.80	2.12	2.10	2.12	1.30	1.30
Toronto**	3.558	2.392	2.90	2.45	2.556	2.80	2.84	1.40	1.40

* Cost of living bonus now included in basic wage. † Plus 8% fringe benefits ** Incl. 4% vacation fund. *a 8 hr. day. *b 7 hr. day. *c Incl. 3% vac. stamp fund plus 7½¢ WF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF. *d Incl. 10¢ H&WF. *e Incl. 10¢ VF. *f Incl. 6% WF. *g Incl. 11½¢ WF. *h $2.65 homes & housing plus 7½¢ WF. *i Incl. 17¢ WF. *j Incl. 10½¢ hr. WF. *k Incl. 7½¢ hr. WF. *l Incl. 4% VF *m Incl. 8¢ hr. WF. *n Incl. 8¢ H&WF, 6% VF, 1% PF. *o Incl. 10¢ PF, 7¢ WF. *p Incl. 3% WF, 3% PF. *q Incl. 10¢ ins; 4% vac. and holiday pay. *r Incl. 4% WF and 20¢ PF. *s Incl. 5% W&PF, 4% VF, 1% NC, 6 PH. *t Incl. 7½¢ H&WF. *u Incl. 1½% PF. *v Incl. 10¢ WF. *w Negotiating. *x 8¢ VP. *y Incl. 23¢ WF. *z Incl. 7½¢ IF, 5¢ H&WF. *A Incl. 18¢ WF, 15¢ PF, 20¢ B.F. *B Incl 3% WF. *C Incl. 15¢ WF. *D Incl. 10¢ H& WF, 5¢ organ. *E Incl. 6% WF, plus travel pay per day. *F Plus $4 per day Annuity contrib. *G Incl. 3¢ Prom. *H Incl. 7¢ WF, 6% VF. *I Incl. 15¢ H&WF, 6¢ for Advtg. *J Incl. 5% WF, 6 PH. *K Incl. 11¢ WF. 12½¢ VF, 10¢ PF. *L Incl. 3% WF, 3% PF, 2% VF, 1% EF. * M Incl. 7½¢ PF. *N Incl. 1% WF. *O Incl. 10¢ WF, 1% PF. *P Incl. 10¢ hosp. ins.; 6¢ vac. * Q 1 drum, 2 drums $ 3.28/3.40. * R Incl. 12¢ WF and 1¢ apprentice. *S Incl. 12½¢ H and WF. *T Incl. 21¢ H, W & VF. *U Incl. 7½¢ WF, 4% VF. *V Incl. 5% WF, 3% PF. *W Incl. 2% F, *X Incl. 8¢ VF, & 7½¢ H & WF. *Y Incl. 7¢ H & WF. *Z Incl. 9½¢ WF. *aa Incl 7¢ WF, 15¢ PF. *bb Incl 8¢ WF. *cc Incl 10¢ ins fund

MEXICO CITY PRICES

In Pesos, F.o.b. City		Nov. '55	Dec., '55
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.19	1.19
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.19	1.19
Skilled Labor Wages			
Carpenters (8 hr. day) 1 el.	av. per hr.	2.25	2.25
Bricklayers (8 hr. day) 1 el.	av. per hr.	2.25	2.25
Struct. Iron Workers (8 hr. day)	av. per hr.	1.37*	1.37*
Remachadores	av. per hr.		
Struct. Steel Shapes 3″-15″ x 12 meters	per metric ton	1564.50	1564.50
Reinf. Steel, Corr. Rods			
⅜″ x 11 meters	per ton	1564.50	1564.50
½″ x 11 meters	per ton	1564.50	1564.50
⅝″ x 11 meters	per ton	1564.50	1564.50
¾″ x 11 meters	per ton	1564.50	1564.50
⅞″ x 11 meters	per ton	1564.50	1564.50
1″ x 11 meters	per ton	1564.50	1564.50
Gravel truck load of 3½ cu. meters			
Blue Gravel	per tr. load	70.00	70.00
Rose Gravel	per tr. load	65.00	65.00
Cement, Std. Port. (Tolteca)	per ton	185.00	185.00
Lumber			
3rd Class Pine	per M ft.	1400.00	1400.00
1st Class Pine	per M ft.	2100.00	2100.00
2nd Class Pine	per M ft.	2000.00	2000.00

* 1st & 2nd floors. Aver rate 4.38

ENR Skilled Average (Bricklayers, Carpenters Iron workers): $3.309. **ENR Common Average** $2.117

EQUIPMENT OPERATOR WAGE RATES

	Truck drivers 1½ T	Truck drivers 4 cy Dump	Truck drivers +4 cy	Tractor Operators incl bulldozers 34-49 hp	Tractor Operators incl bulldozers 70-100 hp	Tractor Operators incl bulldozers 100 & over	Tractor scraper 15-16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	$1.50pp	.....	.....	$2.425	$2.425	$2.425	$2.425	$2.95	$2.95	$2.425	$2.20	$1.60
Baltimore	1.675u	1.825u	1.925u	2.85/3.00b	2.85/3.00b	2.85/3.00b	2.85/3.00b	3.25/3.40b	3.25/3.40b	2.85/3.00b	2.85/3.00b	2.25
Birmingham	1.50	1.85ff	1.92gg	2.56	2.56	2.56	2.70	2.70	2.70	2.61	2.285	1.625
Boston	2.10c	.....	.....	3.025d	3.025d	3.025d	3.025d	3.40	3.40	3.40	2.95	2.22e
Chicago	2.30rr	.....	.....	2.90ag	3.05ah	3.10ar	2.90n	3.50n	3.50n	3.00n	3.00n	.....
Cincinnati	2.10oo	2.20oo	2.30oo	2.925	2.925	2.925	2.925	3.175	3.175	3.175	3.175	3.175
Cleveland	2.42	2.42	2.42	3.15	3.15	3.15	3.15	3.40	3.40	3.15k	3.025	3.025
Dallas	1.50	1.50	1.50	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.625l	1.50/2.00l	1.50/2.00l
Denver	2.05	2.05	2.15	2.05	2.66	2.66	2.66	2.83	2.83	2.66	2.66	2.275
Detroit	2.35	2.35	2.35	3.30m	3.30m	3.30m	3.30m	3.30m	3.30m	3.30m	3.025m	2.78m
Kansas City	2.065n	2.065o	2.14p	2.25	2.80q	2.80q	2.80r	3.045	3.045	2.66	2.80l	2.19
Los Angeles	2.38u	2.38u	2.41u	3.00m	3.00m	3.00m	3.34m	3.16m	3.16m	3.16m	2.50m	2.485u
Minneapolis	2.15	2.15y	2.30	2.53	2.75q	2.97z	2.75	2.97y	3.23z	2.53	2.42	2.25
New Orleans	1.575	1.575	1.575	2.80	2.80	2.80	2.80	2.80	2.80	2.80	2.15	1.575
New York	2.12½aa	2.8966	2.8966	3.428cc	3.428cc	3.428cc	3.564cc	4.374cc	4.374cc	3.564cc	3.564cc	3.04aa
Philadelphia	2.00/2.20u	2.00/2.20u	2.00/2.20u	3.17/3.92m	3.17/3.92m	3.17/3.92m	3.17/3.92m	3.17/3.92m	3.17/3.92m	3.17/3.92m	2.99m	2.15m
Pittsburgh	2.275u	2.275u	2.275u	2.95u	3.275u	3.35u	3.325u	3.425u	3.425u	3.325u	3.425u	2.275u
St. Louis	2.375mmo	.....	.....	3.325kk	3.325kk	3.325kk	3.325kk	3.325kk	3.325kk	3.325kk	2.775kk	2.775kk
San Francisco	2.325u	2.325u	2.315u	3.07m	3.07m	3.07m	3.07m	3.40m	3.40m	3.23m	2.78m	2.40m
Seattle	2.705nu	2.705ndd	2.905nee	2.885m	3.055m	3.055m	3.055m	3.46m	3.46m	3.20m	2.885m	2.62m
Montreal ‖	1.30	1.30	1.30	1.73	1.73	1.73	1.73	1.99	1.99	1.73	1.80	1.60
Toronto	1.81ss	1.81ss	1.72ss	1.98ss	1.98ss	1.98ss	1.98ss	2.45ss	...	...	2.13ss	2.13ss

*a Incl 8¢/hr HWF *b lower rates, straight time, other broken *c 2-axle; 10-wheel $2.15; Euclid $2.35 *d Intermediate *e bldg constr; highway $2.145 *f less than 2-t *g blade *h scoop, bldg *i scoop, road *j plus $2 pd by employer for hosp. death benefits to family *k bldg constr; steel constr $3.40 *l higher rates are union, other taken from min wage scale approved by County Commissioners Court *m incl 10¢ H&WF *n flatbed *o under 10 cy *p over 10 cy *q over 80 hp *r blade grader *s form and subgrade *t single *u incl 7½¢ HWF *v up to 6 cy *w 6-8 cy *x cat oper *y up to 3½ cy *z 3½ cy & over *aa plus approx $5.30 per wk W&PF *bb incl 3% WF, 2% PF, 11 Ph *cc incl 5% WF & 3% PF *dd up to 5 cy *ee 5 cy & over *ff over 1½ T but not incl 3 *gg over 3 but not incl 5 tons *hh excavating *ii incl 4% VP *jj includes 12¢ H, W & PF *kk 7½¢ WF included in base pay *ll Plus 8% fringe benefits *nn 8 cy or less; 8-16 cy $2.90; 16-25 cy $3.15 *oo Plus $2.25/wk WF *pp2-5 T $1.70. *rr incl 12¢ WF *ss incl 5% WF

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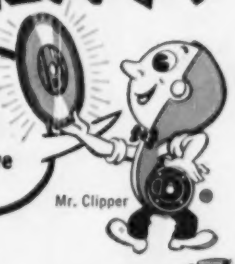

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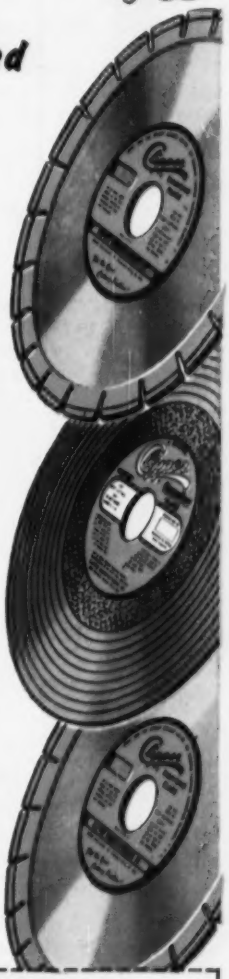

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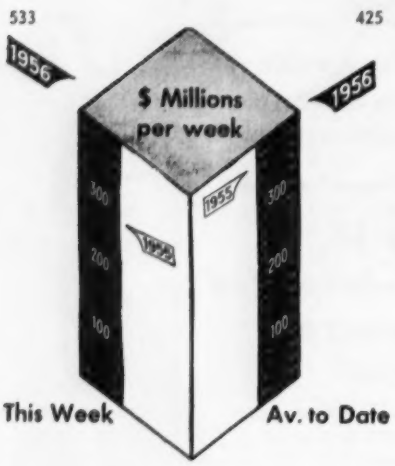
Construction Scoreboard

Contract Awards



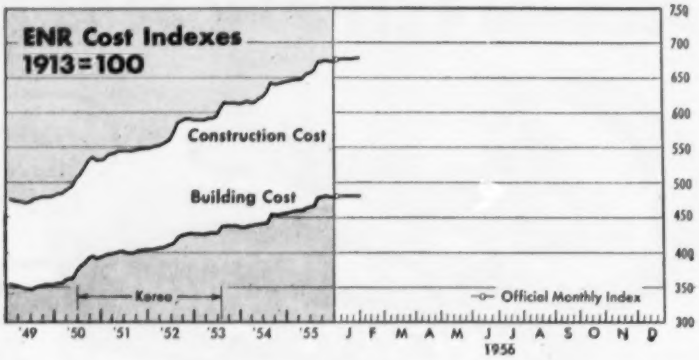
AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 5 wks 1956	Chge %
	$ millions		
Federal	$26.3	$220.9	+14
State and Municipal	105.1	636.5	+62
Total Public	131.4	857.4	+46
Total Private	401.6	1,268.4	+28
U. S. Total	$533.0	$2,125.8	+35
By Type of Work			
Waterworks	$5.7	$28.1	−12
Sewerage	6.9	119.1	+322
Bridges	19.4	58.7	+29
Highways	48.5	195.0	+26
Earthwork, Waterways	2.8	76.7	+102
Buildings:			
Public, Excl. Hsg.	22.4	215.6	+24
Public Housing	3.3	38.2	+832
Private Housing	125.5	498.8	−12
Commercial	74.2	272.9	+145
Industrial	190.0	449.2	+70
Unclassified	34.3	173.5	+13
U. S. Total	$533.0	$2,125.8	+35

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

NEW CAPITAL FOR CONSTRUCTION

	Week of Jan. 26	Cum. 4 wks 1956	Chge '55-'56 %
	$ millions		
Corporate Securities	$45.6	$117.1	−49
State and Municipal:			
All Except Housg.	82.6	261.2	+6
Housing	...	...	−100
Federal Loans	1.3	8.8	+10
Federal Aid	...	...	...
Total Nonfederal	$129.5	$387.1	−25
Federal Appropriations:			
In U. S.	...	...	...
Outside U. S.	...	...	...
Total New Capital	$129.5	$387.1	−25



ENR INDEXES (1913 = 100), 20-cities' average	1956 Jan. 26	% Change from last Month	Year
Construction Cost	680.15	+1.0	+5.4
Building Cost	483.02	+0.9	+5.2

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.680; Building Cost by 1.845. To convert to 1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

BUILDING COSTS AND PRICE INDEXES

1949 = 100

	Original Base Year	(N) Nov '55 (D) Dec '55 (J) Jan '56	% Change from (S) Sep '55 (O) Oct '55 (N) Nov '55 (D) Dec '55	Year ago
Weighted Cost Indexes				
ENR Construction Cost†	1913 = 100	141.79 (J)	+0.5 (D)	+5.1
ENR Building Cost†	1913 = 100	136.58 (J)	+0.4 (D)	+4.9
Associated General Contractors	1913 = 100	446 (D)	0.0 (N)	+3.3
American Appraisal Co*	1913 = 100	126 (D)	+0.2 (N)	+3.5
Marshall & Stevens, Inc	1926 = 100	134 (D)	+1.0 (S)	+4.7
Weighted Price Indexes**				
E. H. Boeckh & Assoc Commercial & Manufacturing	1926–29 = 100	128 (N)	+0.2 (O)	+4.5
Smith, Hinchman & Grylls	1926 = 100	135 (D)	0.0 (N)	+5.1
Contractor Price Indexes				
Aberthaw***	1914 = 100	128 (D)	+0.3 (S)	+1.1
Austin	1926 = 100	123 (D)	+2.5 (S)	+6.2
Fruin-Colnon	1926 = 100	129 (J)	0.0 (D)	+3.3
Fuller	1913 = 100	125 (J)	+1.1 (O)	+4.4
Turner	1939 = 100	126 (J)	+2.5 (O)	+6.3

† Official monthly indexes for January

* Adjusted for estimated productivity

** Includes overhead, profit; adjusted for estimated productivity

*** Index shown is based on 1914 = 100

HIGHWAY BID PRICE INDEXES

Quarterly, 1949 = 100	Original Base Year	1955 Quarter	% Change from Previous quarter	Year ago
California Div. of Highways	1940 = 100	111.5 Q4	+1.9	+10.6
Colorado Dept of Highways	1949 = 100	82.8 Q4	−10.4	− 1.0
Idaho State Highway Dept	1950 = 100	118.6*Q4	− 1.2	+62.0
South Dakota St. Highway Dept	1940 = 100	87.5 Q4	+0.2	+13.9
Texas Highway Dept	1949–53 = 100	109.9 Q4	+1.2	+ 2.9
Washington St. Highway Comm	1940 = 100	86.7 Q4	−0.5	− 2.0
US Bu Pub Roads Composite Mile	1925–29 = 100	154.0 Q3	+3.0	+ 3.2

* Index shown is based on 1950 = 100

CONSTRUCTION MACHINERY PRICE INDEXES

BLS Indexes of Manufacturer Prices, 1947–49 = 100	Dec 1955	% Change from Last mo.	Year ago
All Types	143.0	+0.4	+7.8
Power Cranes and Shovels	143.6	+0.3	+7.6
Tractors	153.1	+0.7	+8.6
Scrapers and Graders	139.3	0	+7.7
Mixers and Pavers	132.0	+1.1	+8.2
Machinery, Tractor Mounted	141.8	+0.7	+8.9
Specialized Constr. Machinery	132.3	0	+7.7
Portable Air Compressors	133.6	0	+6.4
Air Tools, Hand Held	135.7	0	+8.6

Down payments may go up, but . . .

GI Home Loans Will Continue

Congress will probably turn down President Eisenhower's request to let home loan guarantees for World War II veterans die next year.

There is strong sentiment in favor of the three-year extension that Senators John Sparkman and Lister Hill of Alabama proposed in a bill last year. The Senate almost certainly will approve the measure. Opinion in the House is divided, but there, too, odds favor approval of the legislation, perhaps with a slight tightening of mortgage terms.

All three big veterans organizations (the American Legion, Veterans of Foreign Wars, and Amvets) are supporting the extension. Home-builders and mortgage brokers also favor continuation of the program. Most of the opposition comes from banks in smaller towns that don't like the competition of VA-guaranteed home loans in their local markets.

Without an extension, the mortgage guarantee program for World War II veterans would expire July 25, 1957. Builders and mortgage bankers are urging action at this session, and most members of the present Congress agree that the veterans and the industry should get a decision this year.

Sen. Hill heads the Committee on Labor and Public Welfare that has jurisdiction over the Sparkman-Hill measure. Chairman of the subcommittee on veterans affairs that will hold hearings is Sen. Herbert Lehman of New York, who has always supported the program. Ordinarily, the Senate waits for measures of this kind to come over from the House, which has a standing Veterans Affairs Committee headed by Rep. Olin Tague of Texas. This time, however, Chariman Teague is expected to let the legislation get started in the Senate, with hearings there to be announced soon by Sen. Lehman.

• **House is critical**—Senate passage can be pretty well counted on, with Sen. Sparkman rounding up Democratic votes. But, the going won't be so smooth in the House. Thinking of House members is influenced by complaints about shoddy construction and mortgage discounts. Another factor is the widespread belief that extension would yield little benefit to rural areas, where loan activity has been low.

These criticisms at least are likely to lead to House adoption of certain restrictive amendments. For example, House conservatives who go along with the Administration in opposing further extension are sure to demand some kind of down payment requirement before they give any votes to the measure.

Best bet in favor of extension is the general recognition among Congressmen that guaranteed loans to veterans are important to the nation's housing output. In the last two years, VA-guaranteed mortgages have financed more than one fourth of all the private home starts in the country.

In 1954, there were 307,000 VA housing starts, accounting for 24.4% of all private homes started that year. During 1955, the number of VA starts rose to nearly 392,000, or 33% of the total for private housing.

Both of these years were record breakers for VA home starts. The impact of VA-guaranted loans has increased rapidly: In 1952, they financed 13.2% of private housing starts and, in 1953, 14.7%.

• **Korean loans rise**—Not all of these loans were made to World War II veterans, however. Volume of guaranteed loans going to Korean veterans has been mounting. In the last year about 23% of all VA home loans were for veterans, eligible under the Korean program which runs under present law until 1965.

Guaranteed home loans under the Korean GI Bill will continue to rise. There are about 4,300,000 Korean veterans who have returned to private life, and more will be coming back.

A much greater number of World War II veterans, however, have not yet exercised their rights to GI home loans. Only about 4,500,000 out of a total of 16,000,000 have received loans under the World War II program. This leaves 11,500,000 who can still apply.

Extension of the GI loan program for this great mass of World War II veterans would give a tremendous boost to homebuilding, backers of the bill declare. But Eisenhower says that these veterans as a group have made the transition to civilian life, and, for the few who haven't, there are other programs—such as FHA-insured home loans—that can be used. Congress, however, is not likely to remove such a big GI loan prop from the housing market at this time.

Chemical Industry Still Growing Fast

The rapidly-expanding chemical industry, which spent $772 million for construction in 1955, will invest another $1.6 billion in new production facilities during 1956 and 1957, according to a survey released by the Manufacturing Chemists' Association.

MCA's survey covered 599 projects, of which 269 were completed during 1955. The additional 246 projects now under construction will cost $1.1 billion. The study also turned up 84 projects "definitely committed" which will cost a total of $507 million.

The 43-state survey reported only new construction and covered only basic production facilities.

• **Four areas lead**—The South, Southwest, Far West and Middle West are leading the chemical industry's expansion parade, according to the MCA figures.

On an individual state basis, Texas topped all others with $414.8 million worth of construction either completed, now under way, or definitely scheduled. On the same basis, California was second with $185.8 million and Ohio third with $152.6 million.

Louisiana, West Virginia and Georgia invested more than $100 million each in new chemical plants.

Other states with major investments in chemical plant construction included Illinois, with $90.5 million; Tennessee with $88.5 million and New Jersey (which leads all other states in chemical manufacture) $81.6 million.

• **Where the money goes**—For the industry as a whole, the biggest single investment for construction came in the field of organic chemicals with $633 million reported.

Other major construction markets: Inorganic chemicals, $481 million; fertilizer chemicals, $432.9 million; plastics and resins, $288.3 million; textile fibers, $155 million; metals, $154.7 million; rubber, $116.9 million; laboratories (research) $68.8 million and petroleum-natural gas, $46.8 million.

(B&F continued on page 94)

More Aluminum

Ohio River site picked by Olin Mathieson Corp. for integrated plant

With an initial investment of $120 million, the Olin Mathieson Chemical Corp. plans to enter the aluminum industry. It will build a $90-million integrated aluminum plant and power facilities costing $30 million.

The alumina plant, the reduction plant and the rolling mill will be on the Ohio River near Clarington, Ohio. The power plant—to be engineered and built by American Gas and Electric—will be slightly upstream on the West Virginia side at Cresap Bottom and will be connected to the aluminum facilities by a high tension transmission line. The power plant will be built on a new major coal mine which will be constructed, owned and operated by the Pittsburgh Consolidation Coal Company.

The power plant which will be known as the Kammer Plant, initially will consist of two units of 225,000 kw each. One unit will be owned by the Ohio Power Co., a subsidiary of the American Gas and Electric Co.; the other by a joint subsidiary of Olin Mathieson Chemical Corp. and Pittsburgh Consolidation Coal Co. Both power units will be operated by the Ohio Power Co. and integrated into the American Gas and Electric Co. system. The plant will be designed for development of up to 1,350,000 kw capacity.

The Pennsylvania Railroad also is extending its tracks at a cost of several million dollars in order to service the site at Omal, Ohio, near Clarington.

Urban Renewal

'55 was best year yet, URA Commissioner says

Pointing with pride, Urban Renewal Commissioner J. W. Follin last week hailed 1955 as the "most significant year in the history of local slum clearance and urban renewal with federal assistance."

Follin, making a report on the operations of his agency, cited 61 new urban renewal projects that were initiated during 1955. He also pointed to 23 projects that moved into actual site operations during the year.

More important—as far as 1956 is concerned—is the fact that 80 communities had adopted workable urban renewal programs by Dec. 31. The 23 loan-and-grant contracts approved during 1955 bring to 110 the total number of projects for which cities have been authorized to start assembling and clearing land.

Another 106 projects were in the final planning stages on Dec. 31, making a total of 216 projects that URA considers "well-advanced."

• **Federal aid cited**—The federal government's grant program gained substantially in '55. Federal aid amounted to $174 million in 1955. For some 105 projects, the federal government has agreed to make grants totaling $185 million.

Of the 105 projects that were approved for federal grants by the end of '55, temporary loans, totaling $185 million, had been approved for 81. The other 24 projects are being financed with state and local funds.

• **More advance planning**—The Urban Renewal Administration also approved planning advances totaling $21 million during 1955. This was an increase of almost 45% over the total at the end of '54.

Most of the 340 urban renewal projects on the books were started under Title I of the Housing Act of 1949. But 74 are considered "new law" projects, being developed under the 1954 Housing Act. Of the 74, 61 were initiated after Aug. 2, 1954 (when the new law became effective), and the other 13 were started under the old law but converted to take advantage of the 1954 act's more liberal provisions.

Canadian Plant to Turn Waste Into Wallboard

Allied Securities Ltd., Saskatoon, Sask., will start construction this spring on a $2-million factory to manufacture wallboard from wheat straw, a waste product discarded in the process of making building board.

Straw processing techniques will be based on recommendations of the Prairie Regional Laboratories of the National Research Council (Canada) which has completed six years of experiments on use of wheat straw.

This will be the fourth materials supply venture for Allied Securities in recent months. The firm owns the Aggregate and Construction Products Ltd. plant in Regina, a producer of lightweight aggregate; a Winnipeg light aggregate plant is slated to go into production in May; and a $1.25-million Western Clay Products Ltd. plant will be built in Regina in the spring.

Alpha Portland Cement Plans Expansion at St. Louis, Mo.

Alpha Portland Cement Co. last week announced that it plans to spend about $6.9 million for expansion of facilities at its St. Louis, Mo., plant, as part of an overall program to improve present facilities and increase capacity.

The construction program at St. Louis includes raw grinding facilities, additional slurry storage tanks, a new kiln 11-ft in dia and 380 ft long, and a modern finish grinding department. Also included: 10 additional cement storage silos and a bulk loading plant.

Meanwhile, in Arkansas, the state's Industrial Development Commission reported that an unnamed group of Dallas investors is studying possible construction of a $6-million cement plant near Foreman, Ark. The commission said the Foreman plant would have a capacity of 875,000 bbl.

Air Conditioning Boom Seen

Nearly $10 billion worth of large air conditioning units will be installed in the nation's buildings and industrial plants within the next 10 years.

This prediction was made last week by Charles V. Fenn, vice president of the Carrier Corp., who added that plant systems, followed by office buildings, aparatment houses, stores, hotels and hospitals.

Fenn estimated that the overall volume of air conditioning and refrigeration installations completed during 1956, including all markets, would be $600 million.

On the basis of new product and market developments and past growth history, he predicted that the annual sales volume would rise from $850 million in 1960 to $1.3 billion in 1965.

Business Briefs . . .

• **Record cement demand**—The U. S. Department of Commerce predicts that demand for portland cement this year will necessitate a record production of more than 290,000,000 bbls, for the domestic market, plus 6,000,000 bbls for export.

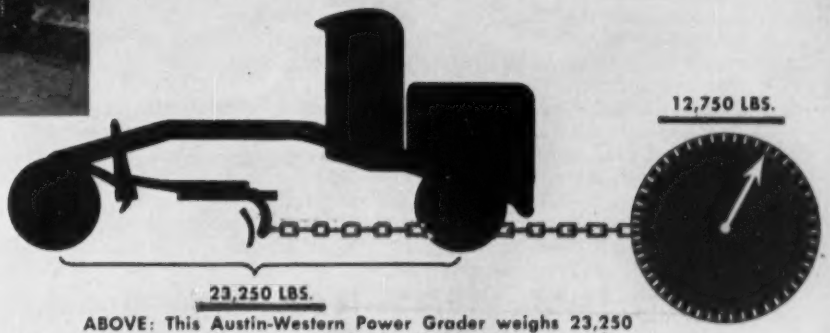
• **Boom in tourist facilities**—Construction of tourist facilities was one of the big items in Florida's 1955 building total, according to figures compiled by the state. Building permits for hotels, motels, apartments and rooming houses totaled $79 million, while building permits for restaurants added up to another $13.4 million.

"Not How Big?" But "How Good?"

The ability of any motor grader to do hard cutting, and move big blade loads of material in the lower gears, where heavy work is done, depends entirely upon the amount of weight carried on *driving wheels*. Total weight has nothing to do with it.

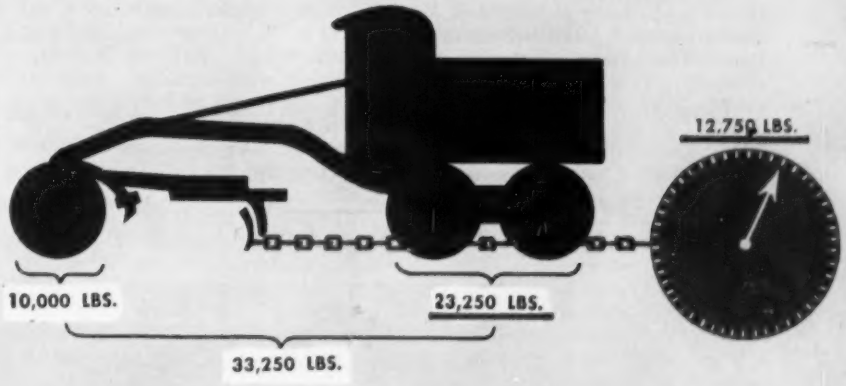
Most for Your Money

From every standpoint . . . first cost, operating cost and upkeep . . . the A-W Power Grader gives you more for your money . . . moves 30 percent more material than an ordinary grader of equal weight and horsepower; and as much material as heavier, more expensive graders . . . as explained in the diagrams at the right.



ABOVE: This Austin-Western Power Grader weighs 23,250 lbs.—all carried on driving wheels. Working in average dirt, it has a blade pull of 12,750 lbs.

BELOW: To obtain the same blade pull, an ordinary motor grader would have to carry 23,250 lbs. on its *rear drivers*; PLUS about 10,000 lbs. on its *dead front end*, for a total of 33,250 lbs.



SIZE IS NOT THE MEASURE OF MOTOR GRADER PERFORMANCE

There's more to the story. All-Wheel Steer . . . another exclusive Austin-Western feature . . . makes the machine twice as maneuverable as graders with front steer only; while the Controlled Traction made possible by the teamwork of All-Wheel Drive and All-Wheel Steer moves more material . . . moves it farther . . . moves it faster. Your nearby Austin-Western distributor will be glad to tell you the whole story of "The Power Graders That Have Everything."

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AURORA, ILLINOIS

Tribute To Unions

Construction firm offers college scholarships to union sons and grandsons

As a tribute to the unions that have contributed to its growth, a New Jersey construction firm has established two scholarships at Newark College of Engineering.

The scholarships are offered by the Damon G. Douglas Company of Newark and are open to sons and grandsons of members of union locals affiliated with the Essex County Building Trades Council. Preference will be given students who plan to major in civil engineering and who come from families associated with bricklayers, iron workers, carpenters, laborers and operating engineers unions.

In announcing its program, the company told union members that the firm, founded in 1931, "is still growing, thanks largely to your help. In thinking how best to recognize your part in the development of the company, we have decided that tuition aid to a good college for sons and grandsons of union members might be an appropriate way of marking the occasion, now and for the years to come." It expressed the hope that the next 25 years "will continue the cordial, growing relationship established between the unions and this company in service to the community."

Each of the scholarships is for $260. One will continue for four years; the other will be reassigned to a new entering freshman each year. At the company's option, summer employment in the building trades may be offered to scholarship holders.

A committee composed of two representatives from the company and one from each of the five union locals will serve the college scholarship committee in an advisory capacity.

Most Plumbing Inspectors Poorly-Paid, Survey Finds

The National Association of Plumbing Contractors poses the question: How well can plumbing codes be enforced when a community pays plumbing inspectors less than $5,000 a year?

A survey conducted by the association indicates that the average plumbing inspector at the present time cannot hope to earn as much as $5,000 a year.

Among other inadequacies revealed by the survey: one out of four plumbing inspectors has other duties such as building, electrical, sewer and heating inspection; some inspectors serve only part time; three out of five are political rather than civil service appointees.

"In too many cases, the establishing, financing and staffing of the plumbing inspection office has been treated with a casual half-hearted effort," declared John M. Rhoades, chairman of the NAPC sanitation committee. He added, "Plumbing inspectors cannot do an effective job without adequate funds and a sufficient number of men in the field. A plumbing code, like any law, is no better than the detection and enforcement behind it."

The survey which covered 217 communities ranging from 6,000 to 8,000,000 population, was similar to a 1949 NAPC study.

New Wage Boosts

Carpenters and laborers win raises in Northwest

Wage increases ranging from 5 to 27 cents have been granted in several instances to carpenters and laborers in the Pacific Northwest.

Members of the laborers union, engaged in both heavy and building construction in southwest Washington, have received a basic wage increase of 12 cents an hour under new contracts negotiated with the Vancouver and Longview Contractors' Associations and two AGC chapters in Portland, Ore.

Effective January 1, the new hourly wage scales are: laborers—$2.30; semi-skilled workers—$2.45; skilled workers—$2.60. Increases for special classifications were 17 cents for operators of light power tools, 22 cents for tunnel workers and 27 cents for asphalt rakers.

The contract provides for an additional 10-cent increase Jan. 1, 1957.

Meanwhile, the Portland heavy construction division of the AGC and the Oregon State District Council of Laborers have agreed on a health and welfare payment of 10 cents an hour for 1956 and a 10-cent wage boost for 1957. Previous scales for the three classifications were $2.25, $2.45 and $2.60. The agreement was reached under the wage reopening clause of a three-year contract signed in 1955.

At the same time, the Portland District Council of Carpenters has accepted a new three-year contract negotiated with members of the AGC and the Portland Home Builders Association.

Hourly basic wage increases for the carpenters are 5 cents for 1956, 10 cents for 1957 and 10 cents for 1958. A cost-of-living escalator clause will add 5 cents an hour for each 2.5% increase in the cost of living index. There is, in addition, a 10-cent health and welfare payment.

Acoustical Ceiling Work Still Bone of Contention

In another jurisdictional dispute over installation of acoustical ceilings, the National Labor Relations Board has ruled that a contractor who isn't violating any contract or court order or voluntary agreement is free to make whatever work assignment he wants to.

In the dispute before the board, an Alabama local of the sheet metal workers union was charged with trying to force a subcontractor to hire sheet metal workers instead of carpenters for installation of an acoustical ceiling.

The sub was using carpenters and laborers. It had no contract with any union and had never agreed to submit the dispute to the National Joint Board for the Settlement of Jurisdictional Disputes. The job was picketed after the union asked that the carpenters be taken off the job.

Under the circumstances, said the NLRB, the union is not lawfully entitled to require the employer to hire sheet metal workers instead of carpenters.

Electrical Workers Win One-Year Wage Increase

A threatened strike of 300 electrical workers employed on Delaware construction projects was averted by agreement on a new contract with the Wilmington branch of the National Electrical Contractors Association.

Under the new one-year agreement, journeymen members of Local 313 receive a 12½-cent wage increase, which raises the journeyman scale to $3.52½.

The contract, which became effective Jan. 1, grants foremen a 5-cent hourly wage increase, contains an escalator clause that will yield a 5-cent raise for general foremen, and automatically boosts the rate for apprentices, whose compensation is tied percentage-wise to that of journeymen.

Noble-Mobile batching plant on wheels

lets you batch at site of fringe jobs and makes those jobs pay

Photo of post-flood reconstruction job in Shelton, Conn., using Noble-Mobile. Owner: Silliman & Godfrey, ready mixed concrete.

Haul Noble-Mobile to job site like a semi-trailer • Set up in one day—no wiring, footings or crane time required • Charge aggregates with front end loader, crane or conveyor • Plant utilizes bulk cement—cement batched automatically • Excellent quality control • Maximum production from mixer trucks—short hauls, more yards per day • Production capacity 60 to 100 yards per hour. Covered by patents pending.

NOBLE BATCHING PLANTS

Portable, semi-portable or stationary plants designed and built by Noble Company • 1860 - 7th St., Oakland 20, Calif. TEmplebar 2-5785

Other Noble Company offices: 20950 Center Ridge Road, Cleveland 16, Ohio. EDison 1-3426.
518 First Ave. North, Seattle, Wash. MUtual 4878 • 117½ W. Manchester, Inglewood, Calif. ORegon 8-4457.

DISTRIBUTORS

Equipment Service Co.	Birmingham	Ala.	Boehck Engineering Co.	Houston	Tex.
Superior Equipment Co.	Phoenix	Ariz.	North Texas Equipment & Supply Co.	Dallas	Tex.
Western Machinery Co.	Denver	Colo.	Richards Equipment Co.	Waco	Tex.
T. B. Holmes & Sons, Inc.	Hartford	Conn.	Border Machinery Co.	El Paso	Tex.
James W. Bell Co.	Cedar Rapids	Iowa	Contractors Machinery Co.	San Antonio	Tex.
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R. G. Moeller Co.	Detroit	Mich.	Star Machinery Co.	Seattle	Wash.
Borchert Ingersoll Co.	St. Paul	Minn.	Intermountain Equipment Co.	Spokane	Wash.
Wepco Equipment Co.	Cleveland	Ohio			

Loggers & Contractors Machinery Co., Portland, Ore.

OFFICIAL PROPOSALS

APPEAR HERE EACH THURSDAY. PROPOSAL ADVERTISEMENTS ACCEPTED UP TO 10:30 A.M. FRIDAY FOR THE ISSUE DATED THE FOLLOWING THURSDAY. SEND ALL ADVERTISEMENTS TO CLASSIFIED ADVERTISING DIVISION, 29TH FLOOR, McGRAW-HILL PUB. CO., INC., 330 W. 42 ST., N. Y. 36, N. Y.

Bids: February 23, 1956

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time, on the 23rd day of February 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

Contract No.	County	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, 65 Court St., Buffalo 2, N. Y.						
E.T. 56-7 S.T. 56-6 R.C. 56-5	Erie	New York State Thruway—Erie Section—Sub. E-6-A (Four Mile Level Road to Cain Road); Angola-Brant-Farnham, S. H. 642 and 3 Secondary Roads	4.91 (1.45) (Acc.)	9" Two Crse. Cem. Conc. Pavt. 2 @ 25' Wide = 4.89 Miles Asp. Conc., Opt. = 1.06 Miles Asp. Conc., Ty. 2B = 0.24 Mile Misc. Work = 0.17 Mile 4 Hy. Steps. Comp. I-Beams 196.5', 381.8', 329.5 and 337.5'	$185,000 Plans $50	$3,278,000
DISTRICT No. 8, J. S. BIXBY, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.						
H.T. 56-1	Westchester	New York State Thruway—Hudson Section—Subs. 10 and 11 (Tuckahoe Road-Tarrytown) (St. Mary's Cemetery)	....	Asp. Conc., Opt. and Misc Work	$1,100 Plans $10	20,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders."

The right is reserved to reject any or all bids. JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: March 13, 1956

Philadelphia, Penna.
Procurement Department
Water Department

Sealed proposals will be received in Room 313, City Hall Annex, until 2:30 P.M., Eastern Standard Time, Tuesday, March 13, 1956, and opened at that time, for BID NO. 2553—CONTRACT NO. 138-W.

FILTER EQUIPMENT AND PIPING
FOR
RAPID SAND FILTERS
AT
TORRESDALE FILTER PLANT

DESCRIPTION OF WORK

In general, this contract includes all labor, materials and equipment for furnishing, installing, testing and placing in service, filter equipment and piping, for a rapid sand filter plant composed of ninety-four (94) single filter units, each approximately 18 feet x 58 feet, having a total capacity of two hundred and eighty-two (282) million gallons per day. The work will consist of filter piping and valves; back wash and surface wash systems; filter equipment; all controls and appurtenances; all inside piping for filter and pumping equipment; piping not encased or partially encased in concrete; all outside wash water piping; sand bins complete including drain piping and manholes; elevated wash water tank foundations; valve chambers and miscellaneous concrete.

Proposal forms, specifications, questionnaires and blueprints may be obtained from the Water Department, in Room 1131 City Hall Annex, Juniper Street and Filbert Street, Philadelphia 7, Penna. A deposit of twenty (20) dollars in cash or certified check is required for each set of blueprints and specifications. This deposit will be refunded upon return of the blueprints, unmarked and in undamaged condition, within ten (10) days after bids are received.

No bids will be received unless bidder is qualified by the Procurement Commissioner. The questionnaire form with all questions fully answered must be filed with the Water Commissioner, 1106 City Hall Annex, Philadelphia, Pennsylvania, at least one (1) week prior to the date of opening bids. Each proposal must be accompanied by security in form and amount as set forth in the proposal.

MICHAEL H. SURA,
PROCUREMENT DEPARTMENT

Bids: March 14, 1956

Louisiana
Department of Highways

NOTICE

SALE OF STATE-OWNED ABANDONED RAILROAD STEEL SPANS WITH CREOSOTED PILES AND TIMBER FENDERS

WHERE IS—AS IS

Sealed bids for the sale of the abovementioned State-owned structures will be received by the Louisiana Department of Highways, Room 307, Highway Office Building, Baton Rouge, Louisiana, until 10:45 A.M., on Wednesday, March 14, 1956. After 10:45 A.M., bids will be received in Room 305, Highway Building No. 3, until 11:00 A.M. No bids will be received after 11:00 A.M. At 11:00 A.M. of the same day and date, they will be publicly opened and publicly read in Room 305, Highway Building No. 3.

STATE PROJECT No. 177-02-06, consisting of approximately 860 tons of all iron or steel materials suitable either for scrap metal or re-use salvageable from two 200' fixed truss spans, one 356' swing truss span, machinery casting, shaftings, etc., fender stairways, ladders, etc., and miscellaneous fender hardware; approximately 235.0 MFBM creosoted timber suitable for salvage from the south rest Pier II east guard wall and pivot Pier III east and west fenders; approximately 9,500 linear feet of salvageable creosoted fir piling above ground level in the three fenders (estimated 27,000 linear feet piling below ground level), offered for sale, and which may be inspected at the site of the Lower Old River Bridge, northeast of Torras, State Route No. 2011 (old), West Feliciana Parish, Louisiana.

Full information and proposal forms may be obtained upon request from the offices of the Department of Highways, Room 307, Baton Rouge, Louisiana.

Bids must be submitted on proposal forms provided by the Department.

The Department of Highways reserves the right to reject any and all bids and waive any informalities.

DEPARTMENT OF HIGHWAYS
GEORGE S. COVERT, DIRECTOR

U. S. Government

BUREAU OF RECLAMATION, NORTH PLATTE RIVER PROJECTS 11856-P10, CASPER, WYOMING, UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Specifications No. 703C-394 for furnishing all labor, equipment, and materials and performing all work for REPLACING BUILT-UP ROOFING AT ALCOVA DAM, Kendrick Project, Wyoming, will be mailed to Box 280, Casper, Wyoming, or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, February 28, 1956, at the office of the Bureau of Reclamation, Reclamation Center, Casper, Wyoming.

Copies of the standard forms and of the specifications may be obtained from the following offices of the Bureau of Reclamation: R. J. Walter, Jr., Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; and I. J. Matthews, Project Manager, Box 280, Casper, Wyoming. No charge for copies of the specifications and drawings furnished for bidding purposes; for all others $0.50 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States. I. J. Matthews, Project Manager.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4618) will be received at Denver, Colorado, until March 6, 1956, for furnishing three 50-foot by 24.91-foot radial gates for Palo Verde Diversion Dam, Palo Verde Diversion Project, Arizona-California. Delivery is desired within 330 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4617) will be received at Denver, Colorado, until February 28, 1956, for furnishing two 174-inch butterfly valves with one set of handling equipment for Glendo Power Plant, Missouri River Basin Project, Wyoming. Delivery is desired within 390 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: February 14, 1956

Contract NYA-730.002

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
TEMPORARY TERMINAL BUILDING
COOLING TOWER FOR CUSTOMS AREA

Sealed proposals for constructing a concrete pad and furnishing and installing a cooling tower thereon will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, February 14, 1956 at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112, and copies will be furnished upon request. No deposit will be required but the documents shall be returned in good condition not later than forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 2, 1956

Bids: February 21, 1956

Contract NYA-650.025

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
INTERNATIONAL ARRIVAL AND AIR-LINE WING BUILDINGS—CONTROL TOWER
PASSENGER ELEVATOR

Sealed proposals for furnishing and installing one electric passenger elevator for the Control Tower in the Central Terminal at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, February 21, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 2, 1956

Bids: February 21, 1956

Contract NYA-650.029

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
INTERNATIONAL ARRIVAL AND WING BUILDINGS
SALE OF MOVING STAIRS

Sealed proposals for the purchase of two moving stairs for the International Arrival and Wing Buildings in the Central Terminal Area at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1112. Documents will be New York 11, N. Y., until 2:30 P.M. on Tuesday, February 21, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 2, 1956

OFFICIAL PROPOSALS

Bids: February 21, 1956

Contract NYA-650.030

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
INTERNATIONAL ARRIVAL AND WING BUILDINGS
ERECTION OF MOVING STAIRS

Sealed proposals for the erection of two moving stairs for the International Arrival and Wing Buildings in the Central Terminal Area at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday February 21, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 2, 1956

Bids: February 21, 1956

Contract NYA-730.001

ADVERTISEMENT

THE PORT OF NEW YORK AUTHORITY
NEW YORK INTERNATIONAL AIRPORT
TEMPORARY TERMINAL BUILDING
AIR CONDITIONING OF CUSTOMS AREA

Sealed proposals for furnishing and installing an air conditioning system in the Customs Area at the Temporary Terminal Building at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, February 21, 1956, at which time said proposals will be opened and read in Room 1108. Air Conditioning Units and cooling tower will be furnished by The Port of New York Authority.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1112. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1112, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, February 2, 1956

Bids: March 27, 1956

Construction of Sewage Treatment Plant

NOTICE TO CONTRACTORS
LOUISVILLE AND JEFFERSON COUNTY
METROPOLITAN SEWER DISTRICT
OF
JEFFERSON COUNTY
KENTUCKY

Sealed bids for constructing sewage treatment plant in Jefferson County, Kentucky will be received at Office of Metropolitan Sewer District, 412 West Market Street, Louisville, Kentucky, until Twelve Noon Central Standard time on Tuesday March 27th 1956 and read at that time.

Project includes construction of eight 1 and 2 story structures from twenty by forty feet to forty five by 190 feet; four sedimentation tanks each 70 by 275 feet; three digestion tanks each 100 feet diameter, two elutriation tanks each 55 feet diameter; sewers; channels, conduits and pipe lines; equipment; roads; and appurtenant work. Drawings and contract documents may be examined and obtained at above office and examined at Office of Metcalf and Eddy Engineers, 1300 Statler Building, Boston 16, Massachusetts; $150.00 deposit on drawing and documents.

Bid security $150,000.00 certified check on a Louisville, Kentucky or New York bank, payable to the District. Successful bidder must furnish one hundred per cent performance bond.

Louisville and Jefferson County
Metropolitan Sewer District
Morris Forman—Chief Engineer

BUREAU OF RECLAMATION, NORTH PLATTE RIVER PROJECTS 11956-P11, CASPER, WYOMING, UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION. NOTICE IS HEREBY GIVEN that sealed bids on Specifications No. 703C-395 for furnishing labor and materials and performing all work for EXTENSION OF GLENDO GOVERNMENT COMMUNITY SEWERAGE SYSTEM, Oregon Trail Division, Glendo Unit, Wyoming, Missouri River Basin Project, will be mailed or delivered to the office of the Bureau of Reclamation in time for the public opening at 10:30 a.m., Mountain Standard Time, March 1, 1956, at the office of the Bureau of Reclamation, Glendo, Wyoming.

Copies of the standard forms and of the specifications may be obtained from the following offices of the Bureau of Reclamation: R. J. Walter, Jr., Regional Director, Building No. 46, Denver Federal Center, Denver, Colorado; C. S. Rippon, Construction Engineer, Glendo, Wyoming; and I. J. Matthews, Project Manager, Box 280, Casper, Wyoming. No charge for copies of the specifications and drawings furnished for bidding purposes; for all others $0.50 per copy, not returnable. Payments should be made by check or money order payable to the Treasurer of the United States. I. J. Matthews, Project Manager

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4616) will be received at Ogden, Utah, until March 15, 1956, for furnishing labor and materials for East Bountiful Pumping Plant and South Davis Pumping Plant, Weber Basin Project, Utah. Location in Bountiful City, Utah. Principal items are 3,570 cu. yds. excavation; 415 cu. yds. concrete; furnishing and erecting 5,800 pounds switchyard steel structures; installing eight main motor-driven 46,000 pounds pumping units; furnishing and installing eight pump discharge valves; constructing superstructure for pumping plants; and other work. Completion time 450 days. For particulars, address Bureau of Reclamation, P. O. Box 360, Salt Lake City, Utah; P. O. Box 387, Ogden, Utah; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

OFFICIAL PROPOSALS

Bids: March 13, 1956

Power Authority of The State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
ELECTRICAL WORK AT THE
BARNHART ISLAND POWER PLANT
NEAR MASSENA,
ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATION NO. PA-5-14030
ST. LAWRENCE CONTRACT NO. 25

NOTICE TO CONTRACTORS: The POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the electrical work at the Barnhart Island Power Plant near Massena, St. Lawrence County, New York, in the following ways:

(1) If brought in person on the day of receiving bids, until 10:30 AM Eastern Standard Time on the 13th day of March 1956, 270 Broadway, Hearing Room C on the 6th floor New York, New York.

(2) If mailed in, until 10:15 AM Eastern Standard Time on the 13th day of March 1956, at the Authority's office, 270 Broadway, Room 1300, New York 7, New York.

The proposals will be publicly opened and read aloud at the time and at the address given in (1) above.

The work includes but is not limited to the installation of Authority furnished equipment consisting of generator auxiliaries, isolated phase bus, transformers, load and motor control centers, control boards, lighting, and wire and cable; the furnishing and installing of miscellaneous electrical equipment, exposed conduit and grounding, crane conductors, and cable trays; and making electrical connections to equipment of a basically non-electrical nature such as pumps, compressors, heating, ventilating and air conditioning, hoists and fire protection equipment.

The work shall be completed on or before December 1, 1959.

Plans, specifications and Proposal Forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall and Rich, 230 Congress Street, Boston 10, Massachusetts, and the Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours, and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of Twenty-five ($25.00) dollars per initial set and Ten ($10.00) dollars per set for additional sets, no part of which will be refunded.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid.

The right is reserved to reject any or all bids.

W. S. CHAPIN
GENERAL MANAGER

PA-5-14030

Prequalification Date: February 6, 1956

Board of Education Bureau of Construction Notice Re Prequalification Forms for Contractors

NOTICE IS HEREBY GIVEN THAT THE Director, of the Bureau of Construction, 4th Floor, 42-15 Crescent Street, Long Island City 1, New York, will receive applications for prequalification of bidders, from contractors who may wish to submit bids for the proposed hereinafter specified contracts, as follows:

For general construction, Conversion and Modernization of Junior H.S.66 to an Elementary School, Blake Ave., Osborne & Watkins Streets, Brooklyn.

Prequalification application forms will have to be secured from and must be submitted to the Director, Bureau of Construction Office, 4th Floor, Room 407, 42-15 Crescent Street, Long Island City 1, New York.

Bids when advertised will be received from prequalified bidders only.

The time for submitting prequalification application forms for the above contract will expire on Monday, February 6, 1956.

WILLIAM H. CORREALE
Director
Dated: January 24, 1956.

EMPLOYMENT OPPORTUNITIES

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Experienced Bridge Construction Superintendent please submit work history and references preliminary to interview, location: Maryland. P-8922, Engineering News-Record.

Administrative Civil Engineer, over 45. P.E. with a background in municipal engineering and specific experience in sewer design and drainage. Must be able to handle administration and personnel problems. Salary $8,400 per year and up. Location Southeastern Michigan. Furnish experience record and references, well detailed. P-8880, Engineering News-Record.

Civil Engineer graduate at least 35, with minimum 5 years municipal engineering. Capable design of sewers and small sewage treatment plants. Salary open. Location Southeastern Michigan. Furnish experience record and references. P-8885, Engineering News-Record.

Engineers one or two years experience in structural design or recent graduates. Consulting engineers office Newark, N. J. Give education, experience and salary. P-8890, Engineering News-Record.

Electrical, Civil, mechanical engineers by consultant on buildings, bridges, highways. Box 121, Station H, Toledo, Ohio. Replies acknowledged.

Heavy Construction Superintendent considerable experience heavy concrete work, sewerage & waterworks construction, general heavy underground work in N. Y. State. Must be thoroughly competent, able to assume responsible position. Engineering background preferred. Start immediately. Permanent position with advancement for qualified person. P-8926, Engineering News-Record.

Superintendent for earth moving and rock excavation to be located in New York and neighboring states. Must be experienced with all phases of earth moving. Salary open. P-8845, Engineering News-Record.

Wanted: Bridge & Highway designers with office and field experience by consulting engineering firm in Pennsylvania. Give complete details and salary desired. P-8381, Engineering News-Record.

Wanted designer or detailer experienced preparation of plans for sewage pumping station, sewage treatment plant and kindred projects. Permanent position with established consulting engineer in Southeast. Excellent opportunity for advancement. Please furnish experience record, training, salary desired, telephone number, etc., in first response. Replies confidential. P-9019, Engineering News-Record.

Graduate Civil Engineer—Design Engineer for progressive West Texas City of 55,000, salary $400 to $500 depending on qualifications. Apply to City Engineer, P.O. Box 3466, Odessa, Texas, giving complete background, references, etc.

Graduate Engineers under 30: with military service completed. Excellent opportunities in both field and office for training and rapid advancement. Starting salaries dependent upon experience. Send complete information and recent photograph. Dondlinger & Sons Const. Co., P.O. Box 2033, Wichita, Kansas.

Registered Civil and Structural Engineers with administrative experience for work in central states. Please give complete resume of experience and education. Reply to P-9044, Engineering News-Record.

Engineers for design and construction supervision on roadways. Projects in central part of U.S. In reply give age, education, detail of experience, professional qualifications, salary requirements and three references. Reply to P-9045, Engineering News-Record.

Four Salesmen: To sell concrete form accessories and tubular scaffolding—in Chicago, New York, Houston & Los Angeles. Must be experienced and thoroughly acquainted in area. Protected territory. Liberal commission against guaranteed draw. Give full details. Confidential. This is the chance of a lifetime for right man. Write P-9039, Engineering News-Record.

Wanted—Construction Engineer and instrument man for heavy construction layout in Philadelphia. P-9041, Engineering News-Record.

Draftsmen — Career opportunities available for two experienced structural steel or ornamental metal detailers and checkers. Desirable working and living conditions. Give full information as to experience and expected remuneration in reply. The J. T. Edwards Co. 1241 McKinley Avenue, Columbus, Ohio.

Superintendent wanted by concrete and asphalt paving contractor in Maryland—Virginia—D.C. area. Unusual opportunity. P-8735, Engineering News-Record.

Engineer-Estimator—Familiar with highway procedures, practices and administration. Position in office of progressive general contractor in Central Ohio. Permanent and immediate. P-9043, Engineering News-Record.

Sales Engineer energetic young organization desires experienced concrete engineer to handle and promote concrete additive. Exceptional opportunity for right man. Send complete resume including recent photograph. State salary requirements. All replies confidential. P-9095, Engineering News-Record.

Engineer—with civil engineering background for position of Assistant City Engineer or Plan Engineer. Duties include sewer and water main design and field work. Salary range $385 to $475 per month. Apply City Engineer, City Hall, South Milwaukee, Wisconsin.

Graduate engineer, mechanical or civil, with actual job operational experience with major national construction or engineering firm or marine construction firm for sales engineering position representing American Hoist & Derrick Company in the Texas, Louisiana and Tennessee area. Send complete confidential resume to the President, American Hoist & Derrick Company, St. Paul 1, Minnesota.

Electrical Engineer: University Campus expansion requires permanent services for consultation, design and inspection of construction on complex electrical installations in buildings, underground utility service, and transformer stations. Degree or equivalent plus several years experience desired. University community attractive to family man. Write qualifications and salary requirements to Personnel Director, Indiana University, Bloomington, Indiana.

Teaching positions available in civil, mechanical engineering. Write Administrative Dean, Fresno State College, Fresno 4, California.

Design Engineer for sewage treatment plants and water system, also instrument man. Write giving age, past experience, education, availability and salary requirements. In Great Lakes area. P-9148, Engineering News-Record.

Party Chief for professional Engineer—Land surveyor. Graduate preferred. Sober, conscientious, with drafting and field experience. Replies should cover items above, salary desired, and references. Reply P. O. Box 464 Bessemer, Alabama.

Soil Engineer—Overseas Airbase. Mild climate. High salary. Family accommodations available. Patchen & Zimmerman Engineers, 140 Nassau St., N. Y. 38, N. Y.—COrtlandt 7-0322.

Municipal Engineer must be registered or able to obtain registration in Ohio; experience in municipal work desirable. Recent graduates also needed as E.I.T.'s; salary is dependent upon experience and qualifications. Apply 500 Municipal Building, Dayton 2, Ohio.

Male Help Wanted: Experienced structural steel detailers. Only men experienced in making detail drawings for fabricating shop need reply. Excellent working conditions with opportunity for advancement for good men. Give references and salary expected in application. Southern Engineering Company, Charlotte, N. C.

SELLING OPPORTUNITY OFFERED

Manufacturer's Representative Wanted. Wanted, a successful salesman with a practical engineering background to present a new product in the Commercial Building Field, representing a well established manufacturer now expanding into national distribution. Product now specified by architects and engineers. Nationally advertised. A ready market and an opportunity for substantial earnings for the right representative. This is our first ad for representatives. Protected territories! Write a resume of your experience, the lines you now represent, references, name, age, address, etc., to RW-9149, Engineering News-Record.

(Continued on opposite page)

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant | **Civil Service Opportunities . . .** | **Employment Agencies**
Positions Wanted | **Selling Opportunities Wanted** | **Employment Services**
Part Time Work | **Selling Opportunities Offered** | **Labor Bureaus**

DISPLAYED —RATES— **UNDISPLAYED**

The advertising rate is $28.25 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
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Subject to Agency Commission.

$2.10 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.
Box Numbers—counts as 1 line.
Discount of 10% if full payment is made in advance for 4 consecutive insertions.
Not subject to Agency Commission.

Send NEW ADS to ENGINEERING NEWS RECORD, 330 W. 42nd St., N. Y. 36, N. Y. for February 16th issue closing February 6th

(Continued from opposite page)

EMPLOYMENT SERVICE

Salaried personnel. $5,000-$30,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, P. O. Box 674, Manchester, Vermont.

POSITIONS WANTED

Structural Engineer, graduate, 30 years, subways, buildings, docks, power plants, chemical plants, available for responsible position. PW-8907, Engineering News-Record.

Chief Estimator, project manager, construction executive, available for association with active, competitive general contractor. Proven profitable record for 15 years. Salary bracket $15,000 per year. PW-8855, Engineering News-Record.

Available Foreman, drilling, blasting, operations excavation, placing concrete, thoroughly experienced. References. PW-8807, Engineering News-Record.

Experienced commercial and industrial building estimator, registered professional engineer, age 39, married, desires connection with general contractor. Middle West or Rocky Mountain location preferred. Available immediately. State location of work, salary range possible, other conditions, in first letter. PW-9013, Engineering News-Record.

Superintendent of construction at present in charge of erection of large atomic reactor, will be available on completion for re-engagement in similar field. Competent to take charge of project domestic or foreign. Write PW-9017, Engineering News-Record.

Construction Engineer—28 years experience. Presently employed as chief engineer and head stimator for nationally known heavy construction firm. Familiar all phases of construction both home office and field. Permanent position desired in any part of country and will consider foreign. Resume and references on request. PW-9022, Engineering News-Record.

Sewer Superintendent or Foreman, aggressive resourceful, extensively experienced in sewerage and drainage construction of interceptors and laterals; desires permanent connection with ambitious, consistent contractor. PW-9007, Engineering News-Record.

Construct. Supt. or general foreman. 30 yrrs. experience on large dirt moving project with all types equipment. Heavy foundations, bridge piers, sewers and roads. PW-8979, Engineering News-Record.

Construction Engineer—Attorney—Pilot. BS & LLB. 6 yrs. experience as project eng., contact & trial attorney with U.S. Corps of Engineers, and commercial pilot. 33 yrs. old, desires association with construction and/or eng. company. PW-8967, Engineering News-Record.

Construction Superintendent: Desires position with progressive organization, in or near New Jersey, will travel if necessary, experience of 25 yrs; full supervision on constructing, industrial & commercial bldgs; hospitals, schools, churches, etc. PW-9070, Engineering News-Record.

Electrical Engineer, BSEE, Reg. Prof. Engr., age 31. Varied electrical experience. Presently heading consulting engineering firm handling power, lighting, controls, signals, etc. Design, planning, supervision, inspection. Managerial status. Desire permanent position with growing organization, similar or divergent field. Western states only. PW-8719, Engineering News-Record.

EXPERIENCED DRAFTSMEN
PIPING and MECHANICAL
PERMANENT EMPLOYMENT IN
NEW ORLEANS AND PENSACOLA
de LAUREAL & MOSES, Inc.
Consulting Engineers
201 Nola Building New Orleans 12, La.
TU 8701

SALARIED POSITIONS $5,000 — $35,000

We offer the original personal employment service (established 46 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars.

R. W. BIXBY, Inc.
559 Brisbane Bldg. Buffalo 3, N. Y.

POSITIONS WANTED

Highway Engineer, 39, BSCE, 18 years experience design and construction including turnpikes and limited access roads. Also experienced in construction of buildings and sewer and water plants. Seeking permanent connection with organization where experience, hard work, and intelligence will assure opportunity for advancement including possibility of a direct interest in organization. PW-9071, Engineering News-Record.

Estimator—Engineer, 34, Reg. C. E. desires partnership arrangement with Southern Construction business. PW-9069, Engineering News-Record.

Electrical Engineer: Thirty years experience with power company, consulting engineers, field installations, design, operation, all phases of electrical work. Married, no children. Free to travel. Personal interview your convenience. PW-9121, Engineering News-Record.

Highway Engineer, B.S. in C.E., Age 37, 10 years in design & construction of pavements, soils, asphalt, concrete and highway materials. Desires permanent position in South as sales engineer. Available after March 1. PW-9117, Engineering News-Record.

Construction Superintendent desires position in Md., Wash. or Va. area. Familiar with all phases of construction work, age 39. PW-9114, Engineering News-Record.

Controller seeking position with architects or engineers. Unusual management experience including budget, cost control, accounting, administration and organization. Please define position and salary. PW-9112, Engineering News-Record.

Construction Engineer—Registered P.E., Illinois and Wisconsin, 6 years experience heavy sewer, bridge and building construction. Location open. Available February 1st. PW-9110, Engineering News-Record.

Estimator, Heavy Construction. Contractor's right-hand man. Extensive experience excavation, foundations, concrete structures, etc. in New York area. Accustomed responsibility. PW-9099, Engineering News-Record.

Cost Engineer, 10 years chemical and power experience. Locate St. Louis area. PW-9128, Engineering News-Record.

PART TIME WORK WANTED

By Two experienced bridge designers, designing or detailing bridges—simple or continuous—reinforced concrete or steel—plate girders or trusses. PTWW-9116, Engineering News-Record.

Sanitary Engineer in Northwest. Experienced all phases water and sewage work. Washington, Oregon registration. PTWW-9129, Engineering News-Record.

ASSISTANT CHIEF ESTIMATOR

Should have 10-15 years experience estimating all phases of engineering and construction work for petroleum refining and chemical process plants.

Successful applicant will supervise and prepare estimates for proposals and contracts for a large engineer-contractor organization, reporting directly to Chief Estimator.

Responsibility, leadership qualities, and ability to negotiate with clients are essential, and an engineering degree is desirable. This opening is known to our employees.

Send Complete Resume with Photo

P-9088, Engineering News-Record
520 N Michigan Ave, Chicago 11, Ill.

DESIGN ENGINEERS

CIVIL-Graduate, with minimum of 3 years experience in design of highways, streets, drainage or sanitary works.

STRUCTURAL-Graduate, with minimum 3 years experience in design of heavy engineering construction.

DESIGN DRAFTSMAN-Minimum 2 years experience in highway or heavy structural engineering projects.

COMPANY PAID HOSPITALIZATION, LIFE INSURANCE, RETIREMENT PLAN, AND VACATIONS.

SEND RESUME, REFERENCES, AND SALARY REQUIREMENTS TO:

PALMER AND BAKER, INC.
Consulting Engineers
P. O. Box 346 Mobile, Alabama

OVERSEAS CONSTRUCTION

OPENINGS NOW & IN IMMEDIATE FUTURE FOR:

. . . Design Engineers
. . . Lab Engineers
. . . Draftsmen
. . . Inspectors
. . . Party chiefs
. . . Instrument Men
. . . Rodmen

(On overseas Airbase Mail Detailed Resume.)

P-8825, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

BUILDING ESTIMATOR

For long established firm, salary commensurate with ability. State full qualifications and references.

P. O. Box 1087, New Canaan, Conn.

SUPERINTENDENT

Mass. contractor wants engineering superintendent experienced in highway construction. Ability to take charge. Reply stating qualifications and salary desired.

P-9063, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ENGINEERS
ENGINEERS
ENGINEERS

WE ARE

A distinguished international company pioneering in all phases of radically new industrial design and construction, including Atomic Energy. A company with limitless future in the new age we are helping to create by a fast moving, really professional team of

ENGINEERS

WE WANT

Qualified electrical, structural, mechanical, and architectural

ENGINEERS

WE OFFER

Excellent salaries, all fringe benefits, good working conditions, high management cooperation and above all, magnificent advancement opportunities for career minded

ENGINEERS

Engineers who wish to investigate these opportunities should submit a resume stating their education, experience and salary requirements to:

THE H. K. FERGUSON COMPANY

ENGINEERS AND BUILDERS

1783 East 11th Street — Cleveland 14, Ohio

STRUCTURAL and MECHANICAL DESIGNERS

Having experience with heavy material handling equipment

Permanent Position For Qualified Men

HOSPITALIZATION
INSURANCE
VACATION

Phone or Write
Chief Engineer for interview

THE WELLMAN ENGINEERING CO.

7000 CENTRAL AVE.
Cleveland 4, Ohio
Telephone EN 1-0842

WELL-KNOWN, FAST-EXPANDING PACIFIC NORTHWEST FIRM REQUIRES

ENGINEERS

Excellent opportunities for—

PRODUCTION ENGINEER

Graduate M. E. with experience in pattern shop and foundry procedure, machine shop operations and mechanical design work.

WELDING ENGINEER

M. E. or Metallurgical background to correlate design of metal products to be welded specifying materials to be used; to specify kinds of metals, alloys and welding equipment; to set up qualification tests and direct inspection.

SALES ENGINEERS

M. E. or equivalent to visit factories, industrial plants, etc. to promote pump products; to survey customer needs and compute production costs. Some pump manufacturing or sales experience required.

PUMP DESIGNER

M. E. or equivalent with design experience in many types of pumps (vertical, horizontal process, horizontal multi-stage, etc.); will supervise drafting group.

PUMP DRAFTSMEN

M. E. or equivalent to direct Junior Engineers in drafting and detailing of pump unit designs. Solid drafting background required but direct pump design experience not essential.

JUNIOR ENGINEERS

M. E. or equivalent to handle layout and detail of pump designs. No direct pump design experience necessary.

Replies will be acknowledge and will be treated confidentially. Send complete resumé of experience, personal data, education and salary requirements.

P-9107, Engineering News-Record
68 Post St., San Francisco 4, Calif.

EXPERIENCED HYDRAULICS ENGINEER WANTED

Graduate engineer experienced in paper mill hydraulics, planning and development of piping layout systems, etc. for large expanding and progressive mill in Maryland. Good salary, all benefits and excellent opportunity for advancement. Send detailed resume of experience and education to

Director of Personnel
West Virginia Pulp & Paper Company
Luke, Maryland

ENGINEERS
and
DRAFTSMEN

Growing company expanding engineering division. Opportunities for rapid advancement into management and development work on TV broadcast antenna towers, industrial buildings, aircraft hangars, mechanical parking garages. Liberal benefits, including retirement. Moving expenses paid.

Write
E. L. Smith
DRESSER-IDECO COMPANY
One of the Dresser Industries
875 Michigan Ave.,
Columbus, Ohio

STRUCTURAL ENGINEER

Graduate civil engineer interested in structural design engineering. Experience not required.

Excellent opportunity with consulting engineering firm. Liberal benefit plans and good working conditions. Location Middle West.

Send resume of education and experience with salary requirements to:

P-9030, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS
Designers Detailers Draftsmen
for work on
Bridges, Expressways, Turnpikes

PERMANENT POSITIONS DEPENDING ON EXPERIENCE AND ABILITY
PAID VACATION, SICK LEAVE HOSPITALIZATION, LIFE INSURANCE
INCLUDE EDUCATION, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

Howard, Needles, Tammen & Bergendoff
1805 GRAND AVE. KANSAS CITY 8, MO.

BRIDGE and HIGHWAY DESIGNERS and DRAFTSMEN

Excellent opportunity for men with experience on bridges and expressways. Give complete resume and salary required in first letter.

RICHARDSON, GORDON and ASSOCIATES
3 Penn Center Plaza
Philadelphia 2, Pa.

ESTIMATOR
OVERSEAS

EXCELLENT PROPOSITION for right man with minimum 10 years experience as an all-round construction estimator. Degree preferred but not essential.

RUSH RESUME ONLY IF QUALIFIED.

P-9162, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

DESIGN ENGINEERS

McKEE's expansion program has created many new openings in our Refinery, Metals and Industrial Divisions.

These are permanent positions with excellent oportunities for advancement in one of the world's largest engineering organizations.

With a fifty-year history of successful operation and continuous growth, McKee designs and constructs Petroleum Refineries, Chemical Plants, Blast Furnaces, Steel Plants, Ore Preparation Facilities and Industrial Plants all over the world. This wide diversification offers a variety of opportunities to qualified engineers, with no age limitations, in the following fields:

PIPING LAYOUT
STRUCTURAL STEEL
CONCRETE
PROCESS HEATERS
EQUIPMENT SPECIFICATIONS
LAYOUT and PROCESS DESIGN
Also ELECTRICAL and
PIPING DRAFTSMEN

McKee offers you top compensation for your work plus the security of a life-time pension. Other benefits include insurance, hospitalization, training program and paid vacations.

Ideal working conditions are provided in large, well-lighted, air-conditioned quarters furnished with the most modern equipment. Ample free parking space is available on the premises.

Adequate housing in good residential communities is available in Cleveland and surrounding suburbs. Excellent schools and colleges offer educational advantages. McKee makes generous allowances for transportation and moving expense.

Interviews will be arranged for those who qualify. Reply by letter giving education and experience. All letters will be answered and kept strictly confidential. PLEASE WRITE TO:

Edward A. Kolner

ARTHUR G. McKEE & CO.
2300 Chester Avenue
CLEVELAND 1, OHIO

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HIGHWAYS AND BRIDGES

Designers
Draftsmen
Office Engineers
Maintenance Engineers
Project Engineers
Location Engineers
Soils & Materials Engineers

Domestic and Overseas Assignments
Knowledge of Foreign language necessary in some classifications.

ARCHITECTS

Architectural Draftsmen

Write, giving full particulars concerning education, experience, personal history and availability to:

Richard L. Shaw
Personnel Director

Michael Baker, Jr., Inc.
Consulting Engineers
Baker Building **Rochester, Penna.**

BECHTEL

ENGINEERS

CHEMICAL — MECHANICAL

Recent design experience on petroleum refineries or chemical plants. Assignments require thorough knowledge of heat exchangers, pumps, piping layouts, specification work and analysis of bids.

DESIGNERS

PIPING

with drafting and layout experience on petroleum refineries, central stations, steam power plants, compressor stations or related projects.

LIBERAL RELOCATION ALLOWANCES FOR ASSIGNMENT SAN FRANCISCO or NEW YORK ENGINEERING OFFICES

BECHTEL

ENGINEERS — CONSTRUCTORS

Send Resume:

5 West 45th St., New York 17, N. Y.
220 Bush St., San Francisco, Calif.

Confidential interviews can also be obtained at: Scanlon Building, Houston, Texas, or Roosevelt Building, Los Angeles, California

ENGINEERS

STRUCTURAL
HIGHWAY
ELECTRICAL

for work on
Bridges, Expressways, Turnpikes

PERMANENT POSITIONS DEPENDING ON EXPERIENCE AND ABILITY

PAID VACATION, SICK LEAVE HOSPITALIZATION, LIFE INSURANCE

INCLUDE EDUCATION, EXPERIENCE, REFERENCES AND SALARY EXPECTED IN APPLICATION LETTER

Howard, Needles, Tammen & Bergendoff
55 Liberty St. **New York 5, N. Y.**

MECHANICAL EQUIPMENT SPECIALIST

Graduate Mechanical Engineer with a minimum of 7 years' experience in the selection, design, operation and maintenance of heavy industrial mechanical equipment. This includes Diesel engines, compressors, pumps, turbines, and other related machinery for oil refinery, power plants and oil producing facilities. Good industrial contacts required. For New York Engineering Department, but job requires occasional travel to Europe and the Middle East.

Salary commensurate with experience and training. Liberal benefit program. Write outlining personal history and work experience.

Recruiting Supervisor, Box 112

ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE
NEW YORK 22, N. Y.

STRUCTURAL ENGINEER

Structural steel designer and estimator for industrial buildings and miscellaneous steel structures. Applicant should be graduate engineer, preferably 35-45 years old, with a minimum of 5 years of actual structural steel design experience. Permanent employment with top pay, paid vacations, group insurance plan, pension plan. Excellent opportunity. Location is in Mid-West. Employer is nationally known, well established steel fabricator.

Reply fully, giving resume of experience, education, age and salary requirements to

P-8946, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

CONSTRUCTION SUPERINTENDENT

Excellent opportunity with one of Delaware Valley's leading engineering and construction companies specializing in Industrial Construction.

Must be thoroughly experienced in all phases of construction, capable of handling several jobs concurrently. Must be cost and system conscious. Must have proven administrative ability. Engineering background desirable.

Interview by appointent only. Write complete information including training, experience, salary and recent photograph to E. J. Troiani.

ROBERT LAMB & SON, INC.
3429 W. Indiana Ave. **Phila. 32, Pa.**

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

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DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

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The advertising rate is $23.60 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to N. Y. Office, 330 W. 42nd St., N. Y. 36, N. Y. for February 16th issue closing February 6th.

Engineers—Foremen—Office Men

Learn latest methods to organize and run work. Prepare for the top jobs.

Send post card for details.

GEO. E. DEATHERAGE & SON
CONSTRUCTION CONSULTANTS
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READY MIX PLANT

Located booming central Florida city. Late type batching facilities and transit-mix equipment. Will sell outright or will sell on lease basis to responsible party.

BO-9152, Engineering News-Record
330 W. 42 St. New York 36, N. Y.

WANTED

1000 TONS
14" H-PILES or
Any Substantial Part
Any heavy section, long lengths

3 to 4 month delivery in the North East

A. S. WIKSTROM, INC.
Contractors
Skaneateles, N. Y. Phone 661

WANTED

USED TANKER TRUCK, suitable for Water Wagon.
RUBBER TIRED ROLLER for use with track type tractor. 50 ton Cap.

SANCTIS CONSTRUCTION, INC.
410 Marlow St. Pittsburgh 20, Pa.

WANTED
BACK HOES
1¼ up to 2½ Yd.
Late Model Machines

ANDERSON EQUIPMENT COMPANY
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Phone: LEhigh 1-6020

FREE
1956 CATALOG
56 PAGES, chuck-full of unsurpassed War Surplus and newly manufactured Equipment Bargains for farm, home, and factory. Write for yours today.
GROBAN SUPPLY CO., Dept. ENR
1130 So. Wabash Ave., Chicago 5, Illinois

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-third year.

WILSON *Engineering Corp*
Textbook Home Office: HARVARD SQ. CAMBRIDGE, MASS.

DRAGLINES-SHOVELS-BACKHOES-DITCHERS

MANITOWOC, Model 3500 Hi-Lift Shovel with Caterpillar Diesel.

LIMA Model 604 Dragline with 70' boom, Cummins Diesel, long and wide crawlers.

LIMA Type 34 "Paymaster" Draglines—Four to choose from—Shovel and Backhoe Attachments available.

MARION Model 33-M Dragline with G.M. Diesel and 40' boom.

P & H Model 255A Dragline with G.M. Diesel, 40' boom, wide and long crawlers. Good Condition. Bargain.

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BARBER-GREENE Model 44-C Crawler Ditcher 5'6" x 24".

BARBER-GREENE Model 705 "Runabout" on Rubber 48" x 7½". Good.

WORTHINGTON 500 cfm Compressor with Cat Diesel.

Call Milton F. Priester JA 5-6885

Priester
MACHINERY COMPANY, INC.
349 South Third St. Memphis, Tenn.

DIESEL POWER
Portable — Stationary
10 to 1420 KVA

A. G. Schoonmaker Company, Inc.
P. O. Box 516 Sausalito, California
50 Church St., New York 7, N. Y.

SNOGO ROTARY SNOW BLOWER

Model LMU mounted on International 4-wheel drive Model K7, Coleman front drive, closed cab, standard chassis, 900x20 tires. Run less than 2000 miles, shows no wear. Can be used to load or blow snow. This was purchased from Gov't Navy Dept. Surplus. Cost over $20,000. Sell for..$3,800.

W. E. McCARTHY, INC.
241 Mystic Ave., Medford, Mass. Tel. MY6-3500

FOR SALE—SHIELD BANTAAM M-47

Mounted on Army ½ track with 1953 backhoe attachment, very good condition.

Also Shovel attachment, complete late model, used 50 hrs., like new. Will deliver Shovel for 50% of new price.

PETER A. KORIMAN
Chandler, Minn. Edgerton tel. 7F004

FOR SALE
One—10" Gorman-Rupp Centrifugal Pump

on 4 wheel rubber tired trailer 1954 Model, driven by 6 cylinder, self starting water cooled Hercules engine.

***Contact* Director of Public Works**
3555 E. Pabst Avenue Cudahy, Wisconsin

FOR SALE
Equipment & Buildings

1—New Sno-Go
1—1952 HD-15
1—Model 1055 Pr H Shovel
All excellent condition
2—Butler Metal Buildings
Complete with Blowers and Electrical Wiring
1—60' x 120 + 1—40' x 140'
Location Connection

Builders Equipment & Supplies Co.
40 Canal Street West Medford, Mass.
MY 6-8700

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ENGINEER'S TRANSIT AT TREMENDOUS SAVINGS!

ONLY **$189.50**

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FIELD TESTED AND ACCEPTED BY LEADING CONTRACTORS! This high precision engineers transit will fill your most exacting needs. This rugged, imported transit insures accurate, precision results at less than half the price of domestic manufactured transits.

ORDER NOW—for early delivery—sold only on a Money back Guarantee. (Write for catalog page containing complete specifications.)

ATLAS INSTRUMENT CO.
705 Douglas St. Sioux City, Iowa

IF THERE IS
Anything you want
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Searchlight Section

One (1) used Northwest 80-D Shovel, S/N 12636.

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Steam Pile Hammers and Extractors

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THREE (3) CONCRETE TRUCK MIXERS
ALL IN GOOD CONDITION

1—3½ yd. Ransom G. M. C. 1950
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Priced to sell

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FOR RENT
MANITOWOC CRANES

Models 2000-B, 3500 or 3900. 25 to 70 Ton Capacity—50' to 125' booms —20' or 30' jibs—manual controls —independent booms—torque converters.

McCARRICK BROTHERS
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Norristown, Pa. Phone: 8-4231

FOR SALE OR RENT
ECA QUALITY REBUILTS

Manitowoc Crane 50-60T., serial #3520, 70' boom, powered by Cat. D-17000 diesel, crawler mounted.

Industrial Brownhoist Locomotive Crane, 35-40T., Mdl. 8, serial #11401, 50' boom, Cat. D-13000 diesel engine. Cap. at 12' radius, 70,000 lbs. without outriggers, 84,000 lbs. with outriggers.

Buffalo-Springfield Tandem Roller 8-ton. Excellent cond.

Austin-Western Tandem Roller, 5 to 8 ton, diesel powered, hydraulic steering. Thoroughly rebuilt.

P. & H. Crawler Crane, Mdl. 255A, 40' boom, ⅝ yd. capacity.

Koehring Crawler Crane, Mdl. 304, 50' boom, ⅝ yd. capacity.

ECA SPECIAL

Rex Pumperete, Mdl. 190, gasoline driven, complete with approx. 450' of 7" pipe and accessories. In good condition. Inspection invited. Sale price Only $3500.00

Please contact your nearest ECA office.

EQUIPMENT CORPORATION OF AMERICA
PITTSBURGH 30, PA. Box J-933, FEderal 1-2000
CLIFTON HEIGHTS, PA. Box J-508 Sub. of Phila. MAdison 6-2200
CHICAGO 4, ILL. 327-J S. La Salle St. WAbash 2-4661
NEW YORK 7, N. Y., 30-J Church St. WOrth 2-0036

RAILS-TIES
TRACK ACCESSORIES
NEW and RELAYING

RAILS NEW — RELAYING — TRACK ACCESSORIES
MIDWEST STEEL CORP.
502 DRYDEN STREET
CHARLESTON, W. VA
IMMEDIATE DELIVERY

SALE OR RENT

TRACTORS—5-D-8's—2 U—16000 Series Top Condition with Now or Near New Tracks and
SCRAPERS—6 Cat. 80's and La Tourneau (HD-20 G Front Loader—4½ Cu. Yd.)
NORTHWEST—80 D Shovel—Late Model—No. 25 Combination Shovel—Crane—Clam
MANITOWOC—4500—140 Ft. Boom—7 Yd.—5 Yd. Buckets
EUCLIDS—3—15 Ton End Dumps
EUCLIDS—12—7½ FDT Bottom Dumps
EUCLIDS—10—43 FDT Bottom Dumps. All Ready to Work—30 to 90 Days Use Since Rebuilt
TRACTORS—2—TD-18's with Power Unit and Push Block
2—HD-20's with Power Unit and Push Block
MOTOR GRADERS—3—#12 Cat. 8T Series

Contact MR. ROBERT B. CLEARY

A. L. DOUGHERTY CO. Contractors
830 So. Pearl St., Albany, New York Tel - 32435
10111 So. Torrence Ave., Chicago, Ill. Tel - Essex 5-7676

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For Sale or Rent

PILING • PILE FITTINGS • PIPE
CULVERTS • VALVES & FITTINGS
SPECIALISTS IN PRE-FAB. PIPING

ALBERT PIPE SUPPLY CO., INC.
Berry at North 13 Sts., B'klyn, N. Y.

ALBERT PIPE SUPPLY APS

EST. 1904
DAVIDSON
PIPE COMPANY INC.
One Of The Largest Stocks In The East
Seamless and Welded ⅛" to 26" O.D. All wall thicknesses Manufactured. Specialty large sizes. Cutting — Threading — Flanging — Fittings — Valves.
Call GEdney 9-6300
80th St. & 2nd Ave., B'klyn 32, N. Y.

JUST RELEASED GOVT. SURPLUS

TENSIOMETER

TRADE NAME DYNAMOMETER

Measures Traction, Tension, or Weight

A PRECISION INSTRUMENT WHERE QUICK TESTS FOR SAFETY ARE ESSENTIAL.

Mfg. by Dillon Co.

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Editorials

In Defense of Lawyers

LAWYERS AND ENGINEERS IN THE POPULAR VIEW—and sometimes in their own opinions—are basically incompatible. Perhaps this idea is born of the classic antagonisms that seem to flourish on nearly every college campus between budding young engineers and lawyers. Perhaps it arises, in so far as engineers are concerned, because of the legal phraseology which often seems to complicate specifications and contracts unnecessarily or because of lawyer-made laws which sometimes seem planned just to make an engineer's life more difficult.

In any event, the view persists. It is undoubtedly exaggerated. But it would be better for all concerned if there were no truth in it whatever.

In a recent address before the legal affairs committee of the American Association of State Highway Officials, Carl E. Fritts, vice president in charge of engineering of the Automotive Safety Foundation, placed the lawyer-engineer relationship in proper perspective. Speaking of the highway development problem, he pointed out that the lawyer is a key figure in helping the engineer to carry out his "engineering intent", in this case, to provide a safe and efficient road.

The lawyer is instrumental in determining the speeds, sizes and weights of vehicles that will use the road. It is he who establishes the right to procure enough right-of-way to give the engineer adequate space in which to build all of the elements of a modern, safe road. He drafts and helps enact the laws that establish the legality of the controlled access highway. With knowledge of the engineer's intent, the lawyer pleads it before the courts. Or by eliciting testimony from the engineering expert witness he demonstrates how the engineering intent is in the public interest. Quite obviously he is an indispensible ally.

What is true of lawyers in the highway field is equally true in other branches of construction. So, lawyers should be treated kindly by engineers and vice versa.

More Individual Responsibility

THE ENGINEERING DEPARTMENT of the Dow Chemical Company's Texas division has a rule that, after the tracing for an engineering drawing has been completed and checked, it shall be stamped with the seal of the registered professional engineer under whose direction it was prepared. A departure from the usual practice of having all drawings bear the seal of the chief engineer, the object is to develop a sense of individual responsibility.

This practice would appear to be one that might be adopted more widely to emphasize to the designer that he is not just a cog in a big machine. If there are legal reasons for requiring drawings to bear another seal, as of a partner in a consulting firm, that still should not prohibit including the designer's seal also. It highlights the part he played in the undertaking.

Time to Act on Water Policy

IT IS HOPED THAT THE RECOMMENDATIONS of the report of the Presidential Advisory Committee on Water Resources, given in last week's issue, will bring action on a problem that has been surfeited with words.

This new report at least has the advantage of brevity—its 35 pages contrasting with the formidable size of its predecessors each of which dwelt at great length with the question of water resource policy. These reports began—in recent years, in any event—with the Water Resources Policy Commission report to President Truman in 1950; this was in three thick volumes. On its heels came Engineers Joint Council's critique of this report; then followed the first Hoover Commission's report; the Kestnbaum Commission later reported on intergovernmental relations; the second Hoover Commission filed its recommendations; and soon we'll have EJC's report on the second Hoover Commission's report.

All these studies have been at odds on many basic points, but on some recommendations there has been almost unanimous accord.

Certain recommendations of the current water policy statement sent to Congress by President Eisenhower repeat, at least in principle, ideas set forth in practically every preceding report. It is once again recommended, for example, that there be an independent board of review to advise the President on water resource projects. It is further proposed that there be a coordinator of water resources in the President's office as his contact with the board of review as well as with the many federal agencies concerned with water use and control.

There are many more sound recommendations succinctly stated in this Eisenhower water resource policy report. Its very brevity ought to encourage congressional study, which may lead to action that failed to follow the earlier and much more wordy water policy pronouncements. Certainly action is overdue, and a good place to start would be with creation of the review board and coordinator's post so often recommended. With that much accomplished, favorable action on the remaining worthwhile policy recommendations would be aided by having knowledgeable people in a position to promote them.

It is possible that simple executive action could establish the desirable positions of control over water policies and projects. But it would be more desirable to have Congress establish them. It is, therefore, to be hoped Congress this time will act—and act promptly—on the President's water policy report.

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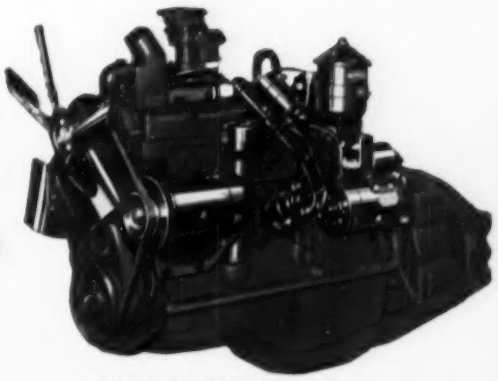

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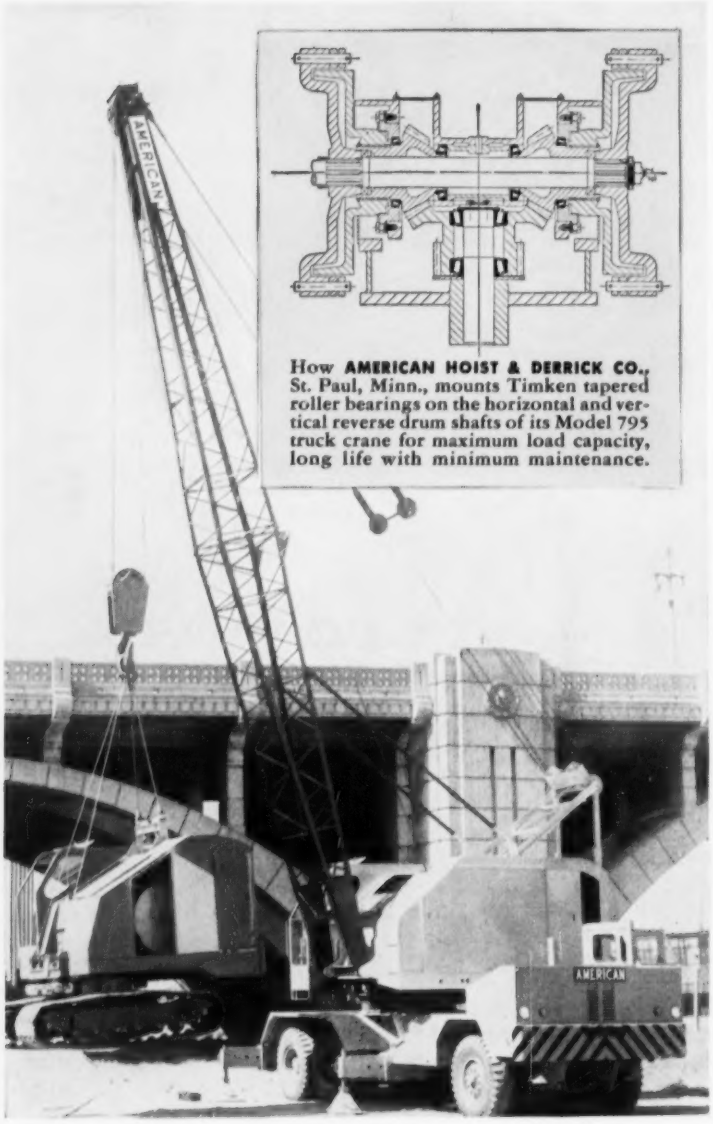

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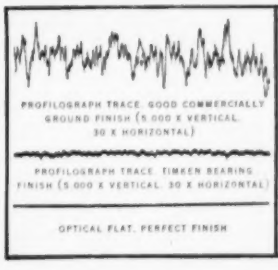
TAPERED ROLLER BEARINGS


PROFILOGRAPH TRACE, GOOD COMMERCIALLY GROUND FINISH (5,000 X VERTICAL, 30 X HORIZONTAL)
PROFILOGRAPH TRACE, TIMKEN BEARING FINISH (5,000 X VERTICAL, 30 X HORIZONTAL)
OPTICAL FLAT, PERFECT FINISH

SMOOTH TO MILLIONTHS OF AN INCH

Surface finish of high quality Timken bearing rollers and races is so smooth that it takes a profilograph to measure its smoothness. This instrument measures surface variations to a millionth of an inch, as shown at the left.

NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◐ AND THRUST ◐ LOADS OR ANY COMBINATION ✳